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Cataloguing and Classification

An introduction to AACR2, RDA, DDC, LCC, LCSH and MARC 21 Standards

Fotis Lazarinis

Cataloguing and Classification

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Dedication

To my wife, *Rania*, and my children,
Lefteris and *Vasiliki*.
Without your love and support,
I couldn't possibly do this.

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List of abbreviations

AACR2	Anglo-American Cataloguing Rules, 2nd edition
ALA	American Library Association
BC	Bliss Bibliographic Classification
CC	Colon Classification
DDC	Dewey Decimal Classification
ER	entity-relationship
FRAD	Functional Requirements for Authority Data
FRBR	Functional Requirements for Bibliographic Records
GARE	Guidelines for Authority and Reference Entries
GMD	general material designation
GSARE	Guidelines for Subject Authority and Reference Entries
IFLA	International Federation of Library Associations
ISBD	International Standard Bibliographic Description
ISBN	International Standard Book Number
ISSN	International Standard Serial Number
JSC	Joint Steering Committee (for Development of RDA)
LC	Library of Congress
LCC	Library of Congress Classification
LCCN	Library of Congress Control Number
LCSH	Library of Congress Subject Headings
MARC	MAchine Readable Cataloguing
MeSH	Medical Subject Headings
NAF	Library of Congress Name Authority File
OCLC	Online Computer Library Center
OPAC	Online Public Access Catalogue
RDA	Resource Description and Access
UDC	Universal Decimal Classification
VRA	Visual Resources Association

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Preface

Systematic organization of information in libraries is crucial for effectively servicing user requests. The overall scope of this book is to introduce the reader to descriptive cataloguing, classification and subject access, which deal with the description of the physical and the intellectual properties of library holdings. The book presents the practices of bibliographic control and focuses on cataloguing and classification codes and discusses their evolution and technical details. The different structures of library catalogues and the principles they are based on are also analysed.

With step-by-step real-world examples and practice material the book provides a practical perspective on the topics discussed. Thus, although primarily a textbook, it serves also as a workbook. This makes it ideal for students of library and information science and for practitioners who wish to acquire or strengthen practical skills in cataloguing and classification. Web references are included at the end of each chapter to help the reader to locate additional information.

Chapter 1 is an introductory text. It discusses the practices of bibliographic control and presents Cutter's rules for catalogues, the Paris Principles and the International Federation of Library Associations' statement of cataloguing principles. The types of catalogues and topics such as headings, access points, main and added entries, authority files and Online Public Access Catalogues are considered next. Descriptive and subject cataloguing and the respective codes and formats are discussed in the last part of the chapter.

Chapters 2, 3 and 4 present the Anglo-American Cataloguing Rules, 2nd edition (AACR2) in depth. The first of these three chapters reviews the evolution of descriptive cataloguing codes and progresses to the description of the International Standard Bibliographic Description, which is the framework on which AACR2 is based. The structure of AACR2 is then detailed. Through several analytical examples, Chapter 3 explains the application of AACR2 to describe the physical characteristics of books. Chapter 4 contains useful information on the selection of access points and the form of headings that are described in the last chapters of AACR2.

Chapters 5 and 6 focus on Resource Description and Access (RDA) and its underlying conceptual models. More specifically, Chapter 5 explores Functional Requirements for Bibliographic Records and Functional Requirements for Authority Data, which are the conceptual models underlying RDA. The main entities (e.g. Work, Expression, Manifestation and Item) and their relationships are defined in this chapter. The next chapter reviews the structure of RDA and the attributes of the entities. It provides specific examples for each entity, helping the reader to develop a working understanding of the new standard.

Chapter 7 deals with classification. The steps of classifying library materials, the main types of classification systems and the major classification schemes are

reviewed. Chapters 8 and 9 detail the Dewey Decimal Classification (DDC) and the Library of Congress Classification (LCC) systems, respectively.

Chapter 10 discusses subject access and reviews the main features of the Library of Congress Subject Headings (LCSH), the Children's Subject Headings and the Sears List of Subject Headings.

Chapters 11 and 12 focus on electronic formats for digitally encoding information about resources. The core digital formats for libraries, i.e. MARC 21, are discussed in Chapter 11. The encoding of AACR2, RDA, DDC, LCC and LCSH data in MARC 21 is exhibited through carefully selected examples. Metadata schemes are the focus of Chapter 12. Some of the best-known metadata schemes are briefly reviewed in this last chapter.

To conclude this short review of the book's contents, I would first like to acknowledge the continuing support of the Chandos Publishing editorial team. Thanks are also owed to Julianne Beall of the Dewey Editorial Office of the Library of Congress for providing some useful insights into DDC. The free trials of RDA ToolKit, WebDewey and Classification Web were invaluable for speeding up the process of finding the desired up-to-date data. The online catalogues of the Library of Congress and the British Library were also vital for verifying several of the examples included in the book.

<div align="right">Fotis Lazarinis</div>

About the author

Fotis Lazarinis has a PhD in Computer Science, focusing on information retrieval and information organization and sharing using standardized XML structures. He has taught classes in Information Systems, Cataloguing and Classification, Digital Libraries, Multimedia and Programming for over a decade, including in the Department of Archives, Library Science and Museology, Ionian University, the Department of Computer Sciences and Biomedical Informatics, University of Thessaly and the School of Computing Science, University of Glasgow. He has published over 50 refereed papers in the proceedings of international conferences and in journals and has authored several textbooks in Greek on computer science, multimedia and research methodology. He has co-organized the iNEWS workshops at the ACM SIGIR (Association for Computing Machinery Special Interest Group on Information Retrieval) and ACM CIKM (Conference on Information and Knowledge Management) conferences. He is a member of the advisory board of the library journals *Program: Electronic Library and Information Systems* (Emerald) and the *International Journal of Digital Library Systems* (IGI Global) and is a reviewer for the refereed journals *The Electronic Library* (Emerald), *Computers and Education* (Elsevier) and *Education and Information Technologies* (Springer).

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Introduction to cataloguing classification

<div style="text-align:right">**1**</div>

1.1 Information organization

Organizing the objects in a library (e.g. books, CDs, maps etc.) and the knowledge (e.g. main and additional subjects) about them in a coherent and consistent way is of vital importance to effectively support the requests of patrons (i.e. library users) and the retrieval of needed information. The organization of information in library and information science is referred to as *bibliographic control*.

Hagler (1997) defines bibliographic control as 'the sum of all the practical operations a librarian undertakes to organize documents and their descriptions so that relevant ones can be located most directly and efficiently in answer to any user's expressed need'. It is clear that bibliographic control is a broad term, integrating all the tasks involved in creating, organizing, managing, updating and exchanging the information about the items in a library or an archival collection. The items could be books, electronic resources, maps, musical files, web pages, computer programs etc.

The three main functions of bibliographic control tools can be summarized as follows (Taylor, 2006):

- identifying or finding a particular bibliographic item
- collocating or gathering closely related materials
- evaluating or selecting the most suitable item that contains the required information and/or is in the appropriate physical form (e.g. on paper or on disc).

> Bibliographic control is today, in the digital age, as important as it was in past decades. One might believe that major search engines like Google, or Baidu in China, make bibliographic control or even traditional libraries redundant, but this belief is far from true. The tools and techniques employed by librarians for information organization are still, and will continue to be, essential in providing *accurate discovery of authoritative material*, through well-defined structures containing knowledge about the objects in a library.

For each item in a library, a *bibliographic record* is developed as a result of one of the basic tasks of bibliographic control. This record, known also as an *entry* or *metadata*, is a uniform description of the item's characteristics, both physical, e.g. title, author, number of pages, and intellectual, e.g. main subject of the item. The record of an item usually also includes its position in the physical library space, i.e. the number of the shelf where it can be found. The development of these records and their

representation using standardized library codes like AACR2 (Anglo-American Cataloguing Rules, 2nd edition) is the focus of this book.

The development of bibliographic records is both an art and a science. It is a science because several principles, codes and rules are involved in systematically describing resources in a uniform style. In the following sections and chapters it will be shown that these principles, codes and rules concern various aspects of the characteristics and knowledge about an item and have been developed over the last century. Interpretations of the current rules, new metadata schemes and instructions continue to evolve as this book is being written. As Gorman (2003) points out, it is the good judgement and the fruits of experience that make a good cataloguer (one of the job roles involved in bibliographic control). This is, undoubtedly, an art. People involved in bibliographic control need sometimes to interpret vague rules or to be creative and experienced in the selection of the correct instructions to accommodate unusual or complicated cases.

Nevertheless, there is no need to be intimidated. All the codes and instructions have a logical structure, which makes them relatively easy to comprehend. Further, solid case studies, examples and interpretations are available in books, journals and on the Web, making the selection of the correct instructions a straightforward task for the majority of cases a librarian will confront.

1.2   Catalogues and catalogue objectives

The bibliographic records of a collection are organized in *catalogues*. The information about all the holdings of a library is registered in a catalogue to support the discovery and retrieval of specific items matching user requests. The catalogue should be comprehensive and systematically organized to allow finding a resource by title, author(s) or other person(s) responsible for a work, subjects, editions etc. Before we go on to discuss the form of a catalogue, it is important to discuss the principles of catalogues as evolved from the nineteenth century to the present.

1.2.1   Cutter's rules

It was *Charles Ammi Cutter*, in 1876 (1904, 4th edition),[1] who first explicitly stated the objectives of catalogues:

1 To enable a person to find a book of which either
   a. the author ⎫
   b. the title   ⎬ are known
   c. the subject ⎭
2 To show what the library has
   a. by a given author
   b. on a given subject
   c. in a given kind of literature.
3 To assist in the choice of a book
   a. as to its edition (bibliographically)
   b. as to its character (literary or topical).

In essence, these functions state that a catalogue should enable people to find books either by defining some of their characteristics (e.g. title) or by searching for specific subjects or kinds of text. In today's environment these functions are considered to be limited in scope, as they are primarily aimed at books, leaving out serials, periodicals and, obviously, contemporary electronic resources. However, they influenced the library and information science community for more than half a century.

1.2.2   The Paris Principles

In 1961 a more comprehensive set of functions for catalogues was stated at the IFLA (International Federation of Library Associations and Institutions; www.ifla.org) conference held in Paris. These functions draw on the earlier works of S. Lubetzky and are known as *The Paris Principles* (IFLA, 1963). The excerpt below concerns the functions of the catalogue. It acknowledges that a catalogue should be an efficient instrument for ascertaining:

2.1 whether the library contains a particular book specified by
  (a) its author and title, *or*
  (b) if the author is not named in the book, its title alone, *or*
  (c) if author and title are inappropriate or insufficient for identification, a suitable substitute for the title; *and*
2.2 **(a)** which works by a particular author *and*
  (b) which editions of a particular work are in the library.

The Paris Principles concerned, in addition, the structure of the catalogue and its entries, among other issues. The catalogue should contain (passage 3.1 of the statement) at least one entry for each book catalogued; and (passage 3.2) more than one entry for each book, should the author be known by more than one name or form of name, or when several authors or collaborators have shared in the creation of the book etc.

1.2.3   FRBR and the 2009 IFLA statement

FRBR (Functional Requirements for Bibliographic Records) is a conceptual model, developed by IFLA, which enumerates as the main user tasks *find*, *identify*, *select* and *obtain* in relation to an entity. FRBR is independent of any cataloguing code and implementation, but the desired user tasks are essentially similar to the principles stated above. However, as will be discussed in a later chapter, FRBR models the bibliographic universe using various entities and richer relationships, which significantly alters the possibilities for the organization of bibliographic resources.

An updated statement, built on FRBR and replacing and broadening the scope of the Paris Principles, was released by IFLA in 2009 (IFLA, 2009). The listed principles are intended primarily to guide the development of cataloguing codes and to provide a consistent approach to describing bibliographic resources of all kinds. In section 4 of the statement an updated list of objectives and functions for catalogues is provided [these objectives are attributed to Svenonius (2000)]:

4.1 *Find* a single or sets of resources.
4.2 *Identify* a bibliographic resource (i.e. confirm that the described entity corresponds to the entity sought or distinguish between entities with similar characteristics).
4.3 *Select* the appropriate bibliographic resource.
4.4 *Acquire* or *obtain* access to an item described.
4.5 *Navigate* within a catalogue and beyond.

Living as we do in a computerized world, it is clear that these objectives and functions are influenced by the fact that alternative forms for each work could exist and that obtaining access to a specific item or accessing other related materials through the catalogue or other bibliographic databases is crucial.

1.3   Card catalogues and OPACs

The preceding sections have reviewed the importance of catalogues, the principles on which they are based and how these principles have evolved to their current state. These principles are not bound to any specific catalogue structure. In real life, however, the realization of the required functions is greatly influenced by the form of the catalogue. The main physical formats of catalogues are:

- card catalogues
- computer catalogues, referred to as Online Public Access Catalogues (OPACs) and accessible via the Web.

Additionally, *book*, *microform* and *CD-ROM* catalogues have been in use, but in the past the card catalogue was the most widespread type, now replaced by the OPAC.

In a card catalogue, bibliographic records are arranged on hand-written or printed cards. Figure 1.1 shows an example of a card describing a printed book. Various metadata about the item are encoded on a card which concern either the physical characteristics of the book (e.g. the size of the book) or the subjects that the book is about.

DF77   Mahaffy, J. P. (John Pentland), 1839-1919.
.M212   Greek life and thought from the age of Alexander to the
1976   Roman conquest / by J. P. Mahaffy. - New York : Arno
       Press, 1976. - xxxviii, 600 p. ; 21 cm. - (History of ideas in
       ancient Greece)

       Reprint of the 1887 ed. published by Macmillan, London.
       Includes bibliographical references and index.

       ISBN 0 405 07318 6

       1. Hellenism.
       2. Greece--Social life and customs.
       3. Greece--Civilization--To 146 B.C
       I. Title   II. Series

Figure 1.1 An example of a bibliographic record on a card

All the information is encoded using various codes referred to as *cataloguing and classification codes* or *standards*. These codes or standards enable librarians to describe their holdings in a consistent way and also guide them as to what data they should maintain for each item.

Although the data on the card depicted in Figure 1.1 comprises the topics covered in the following chapters, the following list will help the reader to gain a preliminary understanding.

- The number 'DF77.M212 1976' is known as the *call number* and is encoded, in this example, using the *Library of Congress Classification* (LCC) scheme. 'DF77' is the *class number*.
- The authorized name form 'Mahaffy, J. P. (John Pentland), 1839-1919' is based on the *Library of Congress Name Authority File* (NAF).
- The information between the title and the ISBN is encoded using the *Anglo-American Cataloguing Rules*, second edition (AACR2).
- Finally, the subjects (e.g. Hellenism) are extracted from a controlled vocabulary, in this case the *Library of Congress Subject Headings* (LCSH).

These codes are discussed in the following chapters of the book.

You can already imagine, however, that gathering and structuring this data is not a trivial task, as one needs to have a solid understanding of the codes which, sad to say, are not static but are constantly evolving to cover new subject areas and new material types and formats. Nevertheless, the foundations remain basically the same and there are several automated services which minimize the effort required to structure the bibliographic record.

Card catalogues, although they may still be in use in some libraries, have been largely replaced by automated catalogues. These catalogues are accessible via the Web and, as mentioned, are called OPACs. Figure 1.2 shows the same record in Figure 1.1 as displayed in Library of Congress Online Catalogue.

Various observations can be made about these two different catalogue forms, the most important being that:

- the data are encoded using the same cataloguing and classification standards in both cases (see, for example, the classification number and the description of the pages and size of the item);
- it is easier to understand the information as displayed in the computerized catalogue, as there are labels for each field, which in most cases are comprehensible. Deciphering the information on a catalogue card is more difficult, as the reader needs to have at least some knowledge of the codes used and their arrangement on the card.

Aside from this, it was much less flexible to maintain information on hand-written or printed cards, as the slightest change in a code or an enrichment of subject lists required amendments to the written/printed material. Creation and even storage of the catalogue were further issues of concern for libraries. The cards came in different dimensions,[2] e.g. 4in x 6in, or 5.2 cm x 12.75 cm, or 5 cm x 12.25 cm, and could be either produced in house, i.e. in the library by its local staff, or bought from the Library of Congress or a commercial company. The cards were held in cabinets, which added to the space requirements of libraries, and specific rules for filing them were issued by the American Library Association (ALA, 1980).

Personal Name	Mahaffy, J. P. (John Pentland), 1839-1919.
Main title	Greek life and thought from the age of Alexander to the Roman conquest / by J. P. Mahaffy.
Published/Created	New York : Arno Press, 1976.

Description
xxxviii, 600 p. ; 21 cm.

ISBN
0405073186

LC classification
DF77 .M212 1976

Subjects
Greece--Social life and customs.
Greece--Civilization--To 146 B.C.
Hellenism.

Notes
Reprint of the 1887 ed. published by Macmillan, London.
Includes bibliographical references and index.

Series
History of ideas in ancient Greece

Figure 1.2 A bibliographic record as displayed in the Library of Congress Online Catalog (http://catalog.loc.gov)
Source: http://lccn.loc.gov/75013278

1.3.1 Access points, headings, main and added entries, tracings, shelflist

The major inconveniences in developing and maintaining card catalogues, however, originated from the different ways patrons could ask for an item. One user might define the item's title, another might know the name of one of the authors or some other person responsible for the work (e.g. illustrator) and a third individual might use the title of the series. The different items of information, such as author, title or subject, used for locating specific bibliographic records are called *access points*, known also as *entry points*.

To provide different access points in card catalogues, multiple copies of each bibliographic record were required (see Figure 1.3 for an example). So there were, at least, a card for each author or any other person associated with an item, a card for the title, a card for each subject assigned to the item and a card for the series the item

DF77　Mahaffy, J. P. (John Pentland), 1839-1919. ——————— Heading
.M212
1976　　　Greek life and thought from the age of Alexander to the
　　　Roman conquest / by J. P. Mahaffy. - New York : Arno
　　　Press, 1976. - xxxviii, 600 p. ; 21 cm. - (History of ideas in
　　　ancient Greece)

　　　Reprint of the 1887 ed. published by Macmillan, London.
　　　Includes bibliographical references and index.

　　　ISBN 0 405 07318 6

　　　1. Hellenism.
　　　2. Greece--Social life and customs.
　　　3. Greece--Civilization--To 146 B.C
　　　I. Title　　　　　　II. Series

(a) Main entry　　　　　　　　Tracings to other headings

　　　　　　　　　HELLENISM ——————— Heading
DF77　Mahaffy, J. P. (John Pentland), 1839-1919.
.M212
1976　　　Greek life and thought from the age of Alexander to the
　　　Roman conquest / by J. P. Mahaffy. - New York : Arno
　　　Press, 1976. - xxxviii, 600 p. ; 21 cm. - (History of ideas in
　　　ancient Greece)

　　　Reprint of the 1887 ed. published by Macmillan, London.
　　　Includes bibliographical references and index.

　　　ISBN 0 405 07318 6

　　　1. Hellenism.
　　　2. Greece--Social life and customs.
　　　3. Greece--Civilization--To 146 B.C
　　　I. Title　　　　　　II. Series

(b) Subject added entry

　　　　　History of ideas in ancient Greece ——————— Heading
DF77　Mahaffy, J. P. (John Pentland), 1839-1919.
.M212
1976　　　Greek life and thought from the age of Alexander to the
　　　Roman conquest / by J. P. Mahaffy. - New York : Arno
　　　Press, 1976. - xxxviii, 600 p. ; 21 cm. - (History of ideas in
　　　ancient Greece)

　　　Reprint of the 1887 ed. published by Macmillan, London.
　　　Includes bibliographical references and index.

　　　ISBN 0 405 07318 6

　　　1. Hellenism.
　　　2. Greece--Social life and customs.
　　　3. Greece--Civilization--To 146 B.C
　　　I. Title　　　　　　II. Series

(c) Series added entry

Figure 1.3 Cards for the same bibliographic record with different headings printed at the top of the card.

belonged to. Usually for each item there were six to eight cards in the card catalogue, one for each access point.

Access points appeared at the top of each card and were referred to as *headings*. For example, Figure 1.3 shows three cards for the same bibliographic record with different headings (each representing a different access point) printed on the top of the card. The first card, with the main author's name as heading, is called the *main entry* and the other copies are *added entries*. The main entry could have as its heading the name of the person or corporate body responsible for the work or the title of the work. Occasionally, the main entry contained the complete data about the record and the added entries had fewer data. The Arabic and roman numerals at the bottom of the card are known as *tracings*, as they point to the other headings existing for the bibliographic records.

Six copies of the bibliographic record, in addition to the main entry, were needed for the card of Figure 1.1: one with the title as heading, three with the subjects as headings, one with the series as heading and one called the *shelflist card*. The shelflist card was an inventory card, kept separately from the other cards. Additional information, such as how many copies of the title the library held, the price and the status of each copy (e.g. damaged) were recorded on the shelflist card.

1.3.2   Card catalogue types

The different arrangements of the entries led to different types of catalogues.

- *Author catalogue*: cards were sorted alphabetically, according to the names of the authors or editors of the entries.
- *Title catalogue*: similar to the previous catalogue, cards were arranged in alphabetical order, but based on the titles of the entries.
- *Dictionary catalogue*: this was the most popular type, found in libraries where all entries (author, title, series, subjects, etc.) were arranged in a single alphabetical order.
- *Keyword catalogue*: this was a subject catalogue arranged in alphabetical order based on keywords.
- *Systematic* or *classified catalogue*: this was arranged by a subject-based system adopted by the library. Author and title heading entries co-existed with subject-based entries which usually had a numerical heading, representing a specific subdivision of a subject.
- *Shelflist catalogue*: in this type, entries were sorted according their shelving order.

It is apparent that different card arrangements were devised to support the required catalogue functions. However, none of these catalogue types could effectively support all of the desired functions and at the same time be easily maintained. With the advances of technology, these arrangements have been replaced by automated catalogues.

1.3.3   Authority files

Apart from the main and added entries and the shelflist cards, a library might use an authority file(s) to maintain uniformity across headings. These files contain authorized forms of the headings used in a catalogue. For example, an author may publish under different names or different forms of name. Variations also exist in titles, series and subject headings. To avoid confusion and to support user requests effectively, no matter which form of name etc. they provide, authority files are used. These contain

the authorized version of each name, title, series, heading and references to the other possible, unauthorized forms. The process of maintaining the authority file(s) is called *authority control*.

> Search the Library of Congress Authorities (authorities.loc.gov) for the author 'Mahaffy, J. P. (John Pentland)', and through the authorized heading you will reach the labelled display (or use directly the permanent link http://lccn.loc.gov/n50041037), where you can see the authorized form and the variants of the author's name. You can also search for an author in the Virtual International Authority File (http://viaf.org) to discover the potential name variants.

1.3.4 OPAC

Computerized catalogues have certain advantages over the card types. There is no need to replicate the records so as to provide different access points. There is only one electronic bibliographic record per item, which can be accessed and displayed in various modes through either the library's local network or the Web (see Figures 1.2, 1.4 and 1.5 for examples). Maintenance is easier and more cost-effective, and sharing of information among library systems is possible.

Nevertheless, both systems share common norms and terminology. For example, as is shown in Figures 1.1 and 1.2, the title, author's name, publisher's data, description, subject etc. are identical. In both cases, these descriptions depend on the AACR2 standard, on the same subject list and on the same classification schemes.

Digital bibliographic records and authority data are encoded using the *MARC 21 Format for Bibliographic Data*[3] and the *MARC 21 Format for Authority Data*.[4] MARC stands for MAchine Readable Cataloguing. Figure 1.6 shows part of the MARC 21 record for a book by E. Svenonius, as displayed in the British Library

System number	008053121
Nat. bib. no.	GBA044465 bnb
Author - personal	●Svenonius, Elaine.
Title	●The intellectual foundation of information organization / Elaine Svenonius.
Publisher/year	●Cambridge, Mass. ; London : MIT Press, c2000.
Physical descr.	xiv, 255 p. ; 24 cm.
Series	(Digital libraries and electronic publishing)
Bibliography etc.	Includes bibliographical references (p. [223]-243) and index.
Subject	●Information organization.
	●Bibliography -- Methodology.
	●Cataloging.
Series	●(Digital libraries and electronic publishing)
Holdings (All)	Details
Shelfmark	YC.2000.a.7850 Request
ISBN	●0262194333 : £22.95
Dewey class. no.	●025.3 21

Figure 1.4 A bibliographic record from the British Library Online Catalogue (http://catalog.bl.uk)
Source: http://primocat.bl.uk/F?func=direct&local_base=ITEMV&doc_number=008053121

The intellectual foundation of information organization / Elaine Svenonius

Bib ID	1907843
Format	Book, Online - Google Books
Author	Svenonius, Elaine
Description	Cambridge, Mass. : MIT Press, 2000 xiv, 255 p. ; 24 cm.
ISBN	0262194333
Series	Digital libraries and electronic publishing
Notes	Includes bibliographical references (p. [223]-243) and index.
Subjects	Information organization.	Bibliography - Methodology.	Cataloging.

Figure 1.5 The same bibliographic record as in Figure 1.4 from the National Library of Australia Online Catalogue (http://catalogue.nla.gov.au)
Source: http://catalogue.nla.gov.au/Record/1907843

100 1		a Svenonius, Elaine.
245 14	|a The intellectual foundation of information organization / |c Elaine Svenonius.
260	|a Cambridge, Mass. ; |a London : |b MIT Press, |c c2000.
300	|a xiv, 255 p. ; |c 24 cm.
490 1		a Digital libraries and electronic publishing
504		a Includes bibliographical references (p. [223]-243) and index.
650 0		a Information organization.
650 0	|a Bibliography |x Methodology.
650 0		a Cataloging.
830 0		a Digital libraries and electronic publishing

Figure 1.6 Part of the MARC 21 encoding of the bibliographic record illustrated in Figure 1.4, as displayed in the British Library Online Catalog
Source: http://primocat.bl.uk/F?func=direct&local_base=PRIMO&doc_number=008053121&format=001

Online Catalogue. Encoding data using the same format promotes interoperability among digital library tools.

Overall, a catalogue is essential for organizing the information in a library. The structure of bibliographic records is governed by various encoding schemes, relevant to both traditional and digital environments. These encoding standards and their evolution will be discussed in the following chapters. But first the concepts of cataloguing and classification need to be explained.

1.4   Cataloguing and classification

Cataloguing is the sum of actions needed to develop, manage and maintain a catalogue of bibliographic records. The definition pertains to both the traditional and the electronic environments. Further, cataloguing involves the activities of physically preparing the item for the shelf,[5] assuming that there is a physical object to handle and the item does not exist only electronically.

As seen in Figure 1.7, cataloguing is further divided into a number of parts.

1.4.1   Descriptive cataloguing

Descriptive cataloguing deals with the description of resources and the determination of access points (e.g. names of persons or corporate bodies considered responsible for or associated with a resource). The bibliographic description of a resource (e.g. book, map, periodical, electronic resource etc.) is the detailed description of a specific *copy* of a specific *edition* of a work. The intention of this task is to identify the work and *distinguish* it from other works by the same author or of the same title or on the same subject. The item's elements (e.g. title, persons associated with the work, edition,
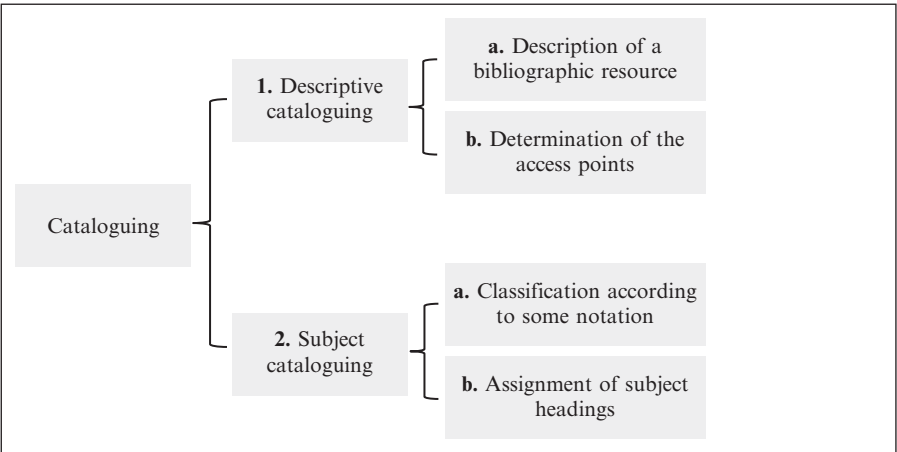
Figure 1.7 Divisions of cataloguing

Greek life and thought from the age of Alexander to the Roman conquest / by J. P.

Mahaffy. - New York : Arno Press, 1976. - xxxviii, 600 p. ; 21 cm. - (History of

ideas in ancient Greece)

Reprint of the 1887 ed. published by Macmillan, London.

Includes bibliographical references and index.

ISBN 0 405 07318 6

Figure 1.8 The part of a bibliographic record resulting from descriptive cataloguing

publisher data, series data, ISBN or ISSN etc.) are then represented in the catalogue using some standardized encoding, e.g. AACR2 or the newer RDA (Resource Description and Access) (Figure 1.8).

The next task is the specification of the access points, which, as previously discussed, are the possible ways a user might search for a bibliographic object. These are also called *entry points* and they are eventually represented at the top of the catalogue cards as headings (main or added headings). The access points are the author names, the title and variants of the title (should they exist), series title, the names of other persons (e.g. illustrators, editors) or corporate bodies associated with the work. Usually the main access point (main entry) is the name of the first author – or the corporate body responsible the work, if no specific person is identified as an author. Cataloguers make these decisions based primarily on a set of rules defined in the cataloguing standard applied.

1.4.2   Subject cataloguing

The second step in cataloguing is subject cataloguing, which is often also referred to as *subject analysis*, although analysis is actually the preliminary step of subject cataloguing. This stage deals with the identification of the intellectual properties of the item, i.e. what the item is about. Subject cataloguing is further divided into classification and the assignment of subject headings.

Classification is, in general, the process of arranging objects into categories. In libraries, classification deals with the determination of the primary subject of a work and the assignment of specific notation. This is used for retrieval purposes, and also for ordering the items in a systematic catalogue and for shelving the item with other items on similar subjects. No matter which classification scheme is used, e.g. LCC or DDC (Dewey Decimal Classification), the process ends with assigning a numerical or alphanumerical code to the item, referred to as the item's *class* or *class number*. The class number serves as the basis for defining the *call number* for the item, which is a unique code assigned by the cataloguer to define the location of the item on the shelf. The call number depends on local library policies and other factors, such as how many editions of the book a library holds, or how many books on the same subject by authors with similar last names the library holds etc.

Example of a class number and call number

'025.32' (class number) is the DDC number for the topic 'descriptive cataloguing'.

The call number for a book on descriptive cataloguing might be '025.32 MAX' or '025.32 MaxR m 1997'. 'MAX' is in fact the first three letters of the main author's name.

Subject headings define additional concepts that the bibliographic item covers. These subjects are taken from widely accepted generic (e.g. LCSH) or dedicated (e.g. MeSH – Medical Subject Headings) lists, although, in principle, any controlled subject-based vocabulary developed locally in a library could be applied.

> Cataloguing is divided into descriptive and subject cataloguing. So why do we talk of cataloguing and classification, when classification is actually part of cataloguing? Descriptive cataloguing and classification are the basic functions performed in every library setting, and therefore we refer to them simply as cataloguing and classification. Hence, by cataloguing we typically refer to descriptive cataloguing and by classification to the specific subdivision of cataloguing, although cataloguing could, based on the context, also refer to all the functions performed in preparing a catalogue.

1.4.3   Speeding up cataloguing: practices and services

Cataloguing is a tedious task requiring a thorough understanding of the practices and encoding standards and the local library policies. This became clear from very early on, so various practices and services were developed to speed up the process and reuse item descriptions.

Describing bibliographic resources from scratch is referred as *original cataloguing*. This means that when a library acquires a new item, cataloguers create the bibliographic record and include it in the card catalogue or, more possibly, in the automated catalogue of the library.

Since most of a library's holdings are neither unique nor rare, to avoid doing the same work, libraries can resort to *copy cataloguing*. Copy cataloguing is the process of finding a matching existing bibliographic record from elsewhere for the item in hand, editing the record as necessary and using the amended record in the local catalogue.

But why the need to amend a bibliographic record? For several reasons, actually: a different classification scheme may be in use locally, which will mean a different class and call number to the original; or a different catalogue type (e.g. classified instead of alphabetic) may be in use; or the locally used authorized forms for names may differ from the original record, so the headings have to be adapted. But in any event, copy cataloguing can speed up the process, reduce the required cost and effort and facilitate data sharing.

In the past, bibliographic records could be purchased, in the form of complete card sets for each item to be catalogued, from the Library of Congress and commercial companies. Later, digital bibliographic records in MARC 21 format (or its previous versions)

could be downloaded from a source and uploaded to the local OPAC. Libraries started to participate in networks to share data. This is known as *cooperative cataloguing*.

OCLC[6] (Online Computer Library Center – www.oclc.org) and its member libraries cooperatively produce and maintain WorldCat (www.worldcat.org), which is considered to be the largest OPAC worldwide. Through this service, the participating libraries can upload records or download and adapt MARC 21 encoded records contributed by the Library of Congress (LC) or other libraries.

The British Library (www.bl.uk) offers free access to MARC records for noncommercial use via the Z39.50 protocol.[7] Similar services are available from other national libraries as well.[8] Commercial services are also available and publishers usually provide MARC 21 records for their books.

Further, there is a practice called *Cataloguing-In-Publication* (CIP). A bibliographic record for (usually) a book is prepared in advance of publication by the National Library or another agency of the country of publication. The publisher includes these data on the copyright page of the published material to facilitate processing of the item.

1.4.4   Cataloguing and classification codes and formats

To achieve consistency in cataloguing and classification, various codes and exchange formats were developed, and these continue to evolve to cover new data forms and information-sharing needs. Standardization is important for a number of reasons.

- Information is organized in a consistent way within a single library and between libraries.
- Copy and cooperative cataloguing and data sharing in general among cataloguing agencies and libraries is possible, making the cataloguing process less expensive and demanding.
- The available standards not only provide encoding instructions but also guide the cataloguers on what they should describe in the descriptive cataloguing of an item.

In general, the utilization of standardized encoding schemes ensures that the desired functions of catalogues will be achieved. But which are the main standards and what they are used for? Although the main standards will be examined in the chapters that follow, some of their characteristics are listed here.

- AACR2
  This is used in descriptive cataloguing. For example, the record in Figure 1.8 is encoded using AACR2. AACR2 is the common abbreviation for the second edition of AACR and its subsequent updates. It is a set of rules for describing the resource and determining the main access points and their authorized forms.
- RDA
  RDA was initially released in 2010 and it is destined to be the successor of AACR2, although, dare I say it, it will be a long time before it fully replaces the older standard. It consists of rules for the description of an item and the relationships between items. RDA is based on the FRBR and FRAD (Functional Requirements for Authority Data) conceptual models.
- DDC
  The Dewey system was devised by Melvil Dewey in 1876 for book classification. It is now in its 23rd edition and the 15th abridged version. It is a mainly hierarchical numerical system with ten main classes, each divided into ten divisions, each having ten sections. When more

than three digits are needed to specify a subject, a decimal point follows the third digit (e.g. 519 is the number for Probabilities and applied mathematics, 519.2 for Probabilities and 519.22 for Stochastic analysis).

- LCC

  LCC is a classification system developed by the LC to organize and arrange book collections. It is an enumerative system, organized into 21 one-letter coded classes. Most of these classes are further divided into more specific subclasses, identified by two-letter or three-letter combinations. Subclasses are further expanded by decimals (e.g. H SOCIAL SCIENCES, HA Statistics and HA154-4737 Statistical data).

- LCSH

  LCSH is a thesaurus of subject headings for use in bibliographic records. It is maintained by the LC and used in subject cataloguing. Approved lists of new and changed subject headings are generally published several times per year as the headings are approved.[9]

- MARC 21

  MARC is not actually a code, but rather, a digital format for structuring bibliographic records described using one of the above formats (see Figure 1.6). The content of a MARC structure can be shared among electronic catalogues. It was released in the 1960s but after that various 'flavours' were developed in different countries (e.g. USMARC, UKMARC, CANMARC, AUSMARC, DANMARC etc.). The USMARC and CANMARC were harmonized to form the current edition, known as MARC 21.

More schemes, which are sometimes language or domain specific, exist for organizing information. For example, Nippon Decimal Classification (NDC) is a library classification system for Chinese- and Japanese-language books, maintained by the Japan Library Association. MeSH is the National Library of Medicine's controlled vocabulary used for indexing medical articles, books and other items. NAF, the Library of Congress Name Authority File, provides authoritative data for names of persons, organizations, events, places and titles. Some structures are specialized for children's materials, e.g. Library of Congress Children's Subject Headings (LCCSH). Finally, a number of metadata schemes are available in the digital environment, e.g. Dublin Core, which is a general-purpose metadata scheme for defining elements like the title, creator and publisher of a resource, and the Visual Resources Association Core, which is a data standard for the description of works of visual culture as well as the images that document them.

1.5   Summary

Bibliographic control is a series of tasks for organizing the objects in a library. Cataloguers and classifiers create bibliographic records, which are then organized in catalogues. During cataloguing and classification they describe the item, decide the access points, classify it according to its main topic and assign additional subjects from controlled vocabularies. In all these tasks, standard codes are used so as to maintain consistency among libraries.

1.6   Review questions

1 What is bibliographic control and what is a bibliographic record?
2 What is a library catalogue? Describe some of the functions which you consider fundamental and timeless for catalogues.

3 What are the functions of catalogues, according to IFLA's 2009 statement?
4 Briefly describe the card catalogue: how is information organized on the cards, what information is entered on a card and approximately how many cards are needed for one item?
5 What is an access point and what is the main access point? How are access points handled in a card catalogue?
6 You have the following information about a book that you must catalogue:

> Stand up, Mr. Dickens : a Dickens anthology
> Presented by Edward Blishen
> Illustrated by Jill Bennett
> Subjects:
> **i.** English literature.
> **ii.** Dickens, Charles, 1812-1870 – Juvenile literature.

How many cards would you need in a card catalogue and which heading would you use in each case? (Authorized forms of headings are not important for this question).
7 Compare card catalogues and OPACs.
8 What is a dictionary catalogue and what is a systematic card catalogue?
9 What is an authority file?
10 Describe briefly the main divisions and subdivisions of cataloguing.
11 What standards are used in descriptive cataloguing?
12 What is copy cataloguing and what is cooperative cataloguing?
13 What are the main reasons for using standardized encoding schemes for cataloguing and classification?
14 Describe briefly the two main classification standards.
15 What do you know about the MARC 21 format?

1.7   Practical exercises

1 Visit the online catalogues of the Library of Congress (http://catalog.loc.gov), the British Library (http://catalog.bl.uk) and your local library and search for your favourite book.
   a. Compare the details of the bibliographic records in these catalogues to understand what information is important, where they match and where they differ.
   b. Examine the MARC display of the record in all cases to become familiar with the format.
2 Visit the Library of Congress Authorities (http://authorities.loc.gov) and by using the Name Authorities find the authorized headings for some of your favourite authors.
3 Again using the Name Authority Headings option of the Library of Congress Authorities (http://authorities.loc.gov) and the Virtual International Authority File (http://viaf.org), identify the pen names (called 'variants') of some authors (e.g. Agatha Christie, Zane Gray etc.)
4 Given the following card in a card catalogue:

RA485 .P685 2001	Smith, George Davey.
	Poverty, inequality and health in Britain, 1800-2000 : a reader / edited with an introduction by George Davey Smith, Daniel Dorling and Mary Shaw. - Bristol, UK : Policy Press, 2001. - lxxxvii, 373 p. : ill., ports. ; 24 cm.
	ISBN 1861343280
	1. Public health --Great Britain --History. 2. Poverty --Great Britain --History. I. Title

answer these questions:
- **a.** Which is the heading of the card?
- **b.** Identify the subjects of the item.
- **c.** Which is the call number of the item?
- **d.** Which part results from descriptive cataloguing?
- **e.** Identify the headings that will be used in the added entries.
- **f.** Is this the main entry card? Justify your answer.

(Authorized heading forms are not important for this exercise).

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8. Libraries Australia, Record Export Service, http://www.nla.gov.au/librariesaustralia/services/cataloguing/res/.
9. Library of Congress Subject Headings (LCSH) Approved Lists, http://www.loc.gov/aba/cataloging/subject/weeklylists/.

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Descriptive cataloguing codes and the anatomy of AACR2

2

2.1 Introduction

During descriptive cataloguing the cataloguer has to describe the physical characteristics of an item and to determine the access points for the item. Descriptive cataloguing uses AACR2 to structure the bibliographic record and determine the access points and their authorized forms. In practice, AACR2 consists of a set of rules per area of interest about an item. AACR2 will be covered later in this and the following chapters. RDA, brought into being during an attempt to create AACR3, is the new standard for descriptive cataloguing, expected to replace AACR2 in the future.

2.2 From Panizzi's Rules to RDA

Rules for cataloguing, primarily of books, were first developed in the nineteenth century. The following are milestones in the development of codes for descriptive cataloguing.

2.2.1 The 'Ninety-One Rules' of Sir Anthony Panizzi, 1841

Panizzi was appointed the Keeper of Printed Books at the British Museum library in 1837, and in 1841 he created a set of rules, referred to as Panizzi's 'Ninety-One rules' (Panizzi, 1841).[1] The rules were numbered and had no titles. Rules 1–8, for example, concern the choice and form of personal name entries. An example of a rule is:

> *III. If more than one name occur in the title, by which it may appear that the work is the production of more than one person, the first to be taken as the leading name.*

2.2.2 Cutter's Rules for a Dictionary Catalog, 1st edition, 1876

Cutter set the objectives for catalogues and developed rules for organizing a dictionary catalogue (Cutter, 1904). The code covered rules for dictionary catalogues, including both entry (for authors, titles, subjects and form headings) and description. The first edition was published in 1876 and the fourth edition in 1904.

2.2.3 *Anglo-American Cataloguing Rules, 1967–2005*

From the end of the nineteenth century until 1949, the American Library Association (ALA), LC and the British Library developed, individually or in collaboration, different cataloguing rules (for more see Mai Chan, 1994, chapter 2; and Taylor, 2006, chapter 2). The AACR were first published in 1967 in two editions, one for North America and another for Britain.[2] AACR is based on the Paris Principles discussed in Chapter 1.

AACR was revised in 1978 by the Joint Steering Committee (JSC), formed by the ALA, the British Library, the Canadian Library Association, the Library Association and LC. The JSC integrated the North American and British texts into a single version known as AACR2.

The main revisions of the second edition were published in 1988, 1998 and 2002. They are known as AACR2 1988 revision, AACR2 1998 revision and AACR2 2002 revision, respectively. Updates of the standard were also published in 2003, 2004 and 2005 (AACR2, 2005). In general, the acronym AACR2 is used for all the updates and revisions from 1978 onwards, although the acronyms AACR2R for the 1988 revision, AACR2R98 for the 1998 revision and AACR2R02 or AACR2R2002 for the 2002 revision may be encountered in the literature. On the cover page of the AACR text the specific revision and update are stated, e.g. 2002 revision, 2005 update.[3] AACR2 is published in loose-leaf format for updating purposes.

AACR2 is a set of rules for describing areas like the title, the publisher, the edition etc. of, among others, books, cartographic materials, music, microforms and continuing resources. Rules for deciding the main and additional headings and their forms are provided as well.

An abridged version, the *Concise AACR2* (Gorman, 2004), presenting simplified interpretations of the common rules, is also available. Rule numbering is different in the abridged version and the regular AACR2 version. Appendix III of the *Concise AACR2* lists the rules in AACR2 that correspond, or correspond most nearly, to the rules in the *Concise AACR2*.

2.2.4 *Resource Description and Access, 2010*

RDA was developed by the JSC to replace AACR2. It depends on the theoretical framework of FRBR and FRAD and was released in 2010. RDA consists of a set of practical instructions and guidelines but, unlike AACR2, these rules concern the works, the relationships between them and the different forms a work can take. It is designed primarily for the digital environment. As of 2013 LC implements all newly created catalogue records according to RDA instructions. RDA is discussed in Chapter 5.

2.3 The International Standard Bibliographic Description

The International Standard Bibliographic Description (ISBD), produced by the IFLA, outlines the elements in a bibliographic description, the preferred order of these elements and the punctuation used to delimit the individual elements or indicate the beginning of a discrete area of description.

Work on the ISBD was established in 1969 and descriptions for different types of materials appeared during the following years. Prior to 2007, ISBD was divided into the following publications for specific types of materials:[4]

- ISBD (G): General International Standard Bibliographic Description, revised edition 2004
- ISBD (A): Older Monographic Publications (Antiquarian), revised edition 1991
- ISBD (CF): Computer Files, 1990
- ISBD (CM): Cartographic Materials, revised edition 1987
- ISBD (CR): Serials and Other Continuing Resources, 2002
- ISBD (ER): Electronic Resources, 1997
- ISBD (M): Monographic Publications, revised edition 2002
- ISBD (NBM): Non-Book Materials, revised edition 1987
- ISBD (PM): Printed Music, revised edition 1991
- ISBD (S): Serials, revised edition 1988

AACR2 is based on ISBD (G), which was first published in the early 1970s. While ISDB defines the areas of description for an item and provides a general arrangement of the bibliographic description, AACR2 provides a set of rules for each area and guides users on how to record the data in a uniform style and how to handle special cases, e.g. the case of more than three authors for a book. In 2007[5] the different ISBDs were consolidated into a single publication, which was revised in 2011.[6]

2.3.1 Areas of description

ISBD divides the description of items into the following areas:

1 Title and statement of responsibility
2 Edition
3 Material or type of resource specific details
4 Publication, production, distribution etc. details
5 Physical description
6 Series
7 Notes
8 Resource identifier and terms of availability.

Each area is then subdivided into further elements. For instance, the *title and statement of responsibility* area is further divided into:

1.1 Title proper
1.2 General material designation
1.3 Parallel title
1.4 Other title information
1.5 Statement of responsibility.

Specific punctuation symbols are recommended in ISBD to delimit the different elements. For example, it states that 'The first statement of responsibility following any title is preceded by a space, diagonal slash, space (/)'. ISBD describes the arrangement of the elements of a record and provides examples per area of description.

2.4 AACR2: understanding its structure

The revisions and expansions of the AACR were driven by the development and revisions of the different ISBD parts. ISBD should be viewed as a general framework for the description of library materials and AACR2 as an applied standard for the cataloguing of all types of materials relying on that framework.

AACR2 is divided into the following parts:

- **Part I (chapters 1–13)** concerns the description of the items to be catalogued:
  - Chapter 1 – General Rules for Description
  - Chapter 2 – Books, Pamphlets, and Printed Sheets
  - Chapter 3 – Cartographic Materials
  - Chapter 4 – Manuscripts (Including Manuscript Collections)
  - Chapter 5 – Music
  - Chapter 6 – Sound Recordings
  - Chapter 7 – Motion Pictures and Videorecordings
  - Chapter 8 – Graphic Materials
  - Chapter 9 – Electronic Resources
  - Chapter 10 – Three-Dimensional Artefacts and Realia
  - Chapter 11 – Microforms
  - Chapter 12 – Continuing Resources
  - Chapter 13 – Analysis
- **Part II (chapters 21–26)** deals with the determination and establishment of headings (access points) and the making of references to those headings:
  - Chapter 21 – Choice of Access Points
  - Chapter 22 – Headings for Persons
  - Chapter 23 – Geographic Names
  - Chapter 24 – Headings for Corporate Bodies
  - Chapter 25 – Uniform Titles
  - Chapter 26 – References
- **Appendices (A-E)** deal with capitalization, abbreviations, numerals, glossary and initial articles of titles in different languages:
  - Appendix A – Capitalization
  - Appendix B – Abbreviations
  - Appendix C – Numerals
  - Appendix D – Glossary
  - Appendix E – Initial Articles

> Chapter numbering in AACR2 is not consecutive, omitting numbers 14 to 20 for chapters, to allow future additions to the standard and also to accommodate the mnemonic structure of the text.

2.4.1 Chapters 1–12 of AACR2

Chapter 1 deals with the general principles of bibliographic description applicable to all kinds of library materials. It is arranged in the following order:

- *General rules (rules 1.0A–1.0H)*
  The 1.0 set of rules, which is further divided into 1.0A to 1.0H, governs the part of the item from which the elements of the bibliographic record are preferably derived (i.e. *chief source of information*); the organization of the description; punctuation; the levels of detail in the description; the language and the script of the description; the diacritical marks; and resources with different sources of information.
- *Rules per area of description (rules 1.1–1.8)*
  These rules deal with the organization of information within the following eight areas, matching the ISBD areas mentioned earlier in this chapter:
  1 Title and statement of responsibility
  2 Edition
  3 Material (or type of publication) specific details
  4 Publication, distribution, etc.
  5 Physical description
  6 Series
  7 Note
  8 Standard number and terms of availability
  For example, rule 1.1, which is further divided into rules 1.1A to 1.1G, governs the transcription of the *title and the statement of responsibility* from the resource to the bibliographic record. Each of these sub-rules is further divided to cover various instances of the respective area. For instance, rule 1.1B deals with the transcription of the *title* and the sub-instructions 1.1B1 to 1.1B10 particularize this process to cover various cases, e.g. where there is an additional collective title to the item or the item lacks a title or the title includes separate letters or initials.
- *Rules for special kinds of items (rules 1.9–1.11)*
  These rules cover the description of supplementary items, items made up of several types of material, facsimiles, photocopies and other reproductions. These instructions are limited in number and usually refer to another rule of a previous category.

Areas X.0 to X.8 (X denoting the number of the chapter) of chapters 2–12 are structured in accordance to chapter 1 and stipulate the rules for specific types of material. For instance, area 1.2 of chapter 1 refers to the general rules for transcribing the edition area, area 2.2 of chapter 2 deals with the rules about the edition area of books, pamphlets and printed sheets, and area 9.2 of chapter 9 covers the rules for the edition area of electronic resources. Similarly, areas 1.5, 2.5, 3.5, . . ., 12.5 all deal with rules about the physical description of items.

Example of rule numbering

Rule 1.4C2
1 = Chapter 1
4 = Publication, Distribution, etc. area
C = Place of publication, distribution, etc. sub-area
2 = second rule within this sub-area

Some chapters contain, in addition, rules for special types of resources. For instance, areas 2.12–2.18 of chapter 2 deal with early printed monographs. Area 1.3 of chapter 1 refers to the material- or type of resource-specific details area of description defined in

ISBD. However, the material-specific details cannot be generalized, and therefore area 1.3 does not actually contain any rules, but rather points to chapters on specialized materials. For example, rules for this area are defined in chapter 3 (rules 3.3), which deals with cartographic materials.

A criticism to AACR2, and with good reason I suppose, is that the rules of chapters 2–12 regularly refer to the respective rule of chapter 1 (see the examples below). So, to catalogue a book, for example, the cataloguer has to consult chapter 2 and refer back to the respective rules of chapter 1 to ensure that all cases are considered. In this respect, most of the rules of chapters 2–12 are not complete but need to be combined with the general rules to establish the appropriate transcription of the data to the bibliographic record. Likewise, the general rules of chapter 1 are incomplete if they are not used in combination with the respective rules of one of the chapters 2–12.

Rule examples

Rule 1.4C2
 Chapter **1**: General Rules for Description
Area **4**: Publication, Distribution, etc., area
Sub-area **C**: Place of publication, distribution, etc.
Rule **2**: Supply another form of the name of a place if such an addition is considered desirable as an aid to identifying the place, using the English form of name if there is one.
  Lerpwl [Liverpool]
  Christiania [Oslo]

Rule 2.4C1
 Chapter **2**: Books, Pamphlets, and Printed Sheets
Area **4**: Publication, Distribution, etc., area
Sub-area **C**: Place of publication, distribution, etc.
Rule **1**: Give the place of publication, distribution, etc., as instructed in 1.4C.

2.4.2   Chapter 13

The scope of chapter 13, entitled 'Analysis', is to give instructions for describing a part or parts of larger works and the creation of additional access points for them. An entry for a part of an item, for which a comprehensive entry is also made, is called *analytical entry* in AACR2.

Rule 13.2 deals with analytical added entries and rule 13.3 with the analysis of monographic series and multipart monographs. A special record, called the 'in' analytic is described in area 13.4. An 'in' analytic record shows the description of the part, followed by a brief description of the comprehensive work.

2.4.3   Chapters 21–26

These chapters deal with the choice of access points and their form. More specifically:

- *Chapter 21 – Choice of Access Points*: deals with the selection of access points and the determination of the main entry and the added entry headings. For example, the general rules 21.1

state the conditions for selecting as a main entry a personal author, a corporate body or the title of the work.

- *Chapter 22 – Headings for Persons*: contains rules about the form of headings of personal names. Authors publish under pseudonyms, nicknames, shortened form of name, have titles of nobility, etc., and different authors may have similar names. Therefore there is a need to create authorized forms of headings for personal names to disambiguate such cases and provide uniform access to the resources. Rules like 'select the name by which a person is commonly known' are included in this chapter.
- *Chapter 23 – Geographic Names*: concerns the form of headings used for geographic names and place names. Geographic names and place names can be expressed in a non-English language on an item to be catalogued. AACR2 calls for use of the English form of a place name. Rules for handling changes of the name of a place are also included in this chapter.
- *Chapter 24 – Headings for Corporate Bodies*: includes instructions for the form of heading for corporate bodies. Names of corporate bodies may change or be written in non-roman text, and different bodies may have the same or similar names. The chapter guides cataloguers in deciding the proper heading form.
- *Chapter 25 – Uniform Titles*: deals with the uniform title and its format. This chapter includes rules for creating a uniform title for works that appear under more than one title or different works which have the same title. Other challenging cases for titles are handled as well.
- *Chapter 26 – References*: provides guidance for the addition of reference tracings to other headings. The different forms of references, e.g *see* or *see also*, are first defined and specific rules and examples are presented. Basically, references are made from the different forms of personal, corporate and place names under which a user might search. A 'see' reference example might be:

> European Community
>   see
>   European Union

In general, the rules of chapters 21–26 help in establishing authorized forms of headings and maintaining the authority file of the library.

2.4.4 Appendices (A–E)

The appendices concern issues like capitalization, abbreviations and the use of initial articles:

- *Appendix A – Capitalization*: includes instructions about capitalization of personal and corporate names used as headings. These rules state, for example, that the first word of each heading and subheading should be capitalized (rule A.2Al).
- *Appendix B – Abbreviations*: deals with the rules that govern the use of abbreviations in catalogue entries. These instructions control the use of abbreviated state names, month names, Cyrillic, Greek and Hebrew words etc. Specific lists of abbreviations are included in the appendix. For example, 'edition, -s' is shortened to 'ed., eds.'; 'corrected' is abbreviated to 'corr.'; the Greek word volume 'τόμος' is reduced to 'τ.'; the Cyrillic word edition 'издание' is abbreviated to 'изд.' etc.
- *Appendix C – Numerals*: instructions for the use of numerals under various circumstances are described in this appendix. For instance, it is stated to use roman numerals in headings for persons (e.g., rulers, popes) (rule C.2A1).

- *Appendix D – Glossary*: contains definitions of some of the more important cataloguing terms used in the rules. For instance, access point is defined as 'A name, term, code, etc., under which a bibliographic record may be searched and identified. See also Heading.'
- *Appendix E – Initial Articles*: this chapter was added on 2001 and contains a useful list of initial articles in many languages. According to the general rule E.1A, the definite and indefinite articles listed in Appendix E should be omitted in headings, as instructed in chapters 22–26. Some examples of initial articles included in the appendix are: 'the' (English), 'el-' (Arabic), 'hin' (Icelandic), 'am' (Scottish Gaelic), 'az' (Hungarian) etc.

2.4.5 Chief source of information

AACR2 states that 'the chief source of information is the source of bibliographic data to be given preference as the source from which a bibliographic description is prepared'. For each type of material, one or more chief sources of information are specified in the general rules of the respective chapter (see Table 2.1 for examples). For instance, the *title page* is defined in chapter 2 'Books, Pamphlets, and Printed Sheets' as the chief source of information. The identification of the chief source of information helps to achieve consistency in bibliographic records.

The rules specify the chief source of information and provide alternative sources for cases where the main source is not available. The cataloguer has to consult the respective rules before starting the cataloguing process, so as to recognize all the available options for defining the chief source of information.

2.4.6 Punctuation

As the ISBD instructs, specific punctuation is used to delimit the description areas and the elements within a description. Some examples of punctuation used in descriptions are:

- full stop, space, dash, space (. -): separates the description areas
- space, diagonal slash, space (/): precedes the first statement of responsibility

Table 2.1 **Examples of chief sources of information for different types of material**

Rule	Type of material	Chief source of information
2.0B1	Printed monographs	Title page
3.0B1	a. Atlases	a. Item itself
3.0B2	b. Cartographic Materials	b. Item itself or if this is inappropriate the container or case or the cradle and stand of a globe
4.0B1	Manuscripts	Manuscript itself: Title page, Colophon, Caption, Heading, Content of the manuscript
7.0B1	Motion Pictures and Videorecordings	Item itself
8.0B1	Graphic Materials	The item itself, including any labels or the container

- square brackets ([ ]): encloses the general material designation and information that does not come from the chief source of information
- space, equals sign, space (=): separates the title from the parallel title

Most of the punctuation is similar in catalogue entries in both card and electronic catalogues. However, some punctuation marks, like the *full stop, space, dash, space* are used only in card catalogues, to separate the description areas (see Figure 1.1). In online catalogues, data are entered under different MARC tags and are displayed in tabular form in web pages (see Figures 1.5 and 1.6), so there is no need to use the specific sequence of marks. MARC is discussed in Chapter 11.

2.4.7   Levels of description

To describe a resource we need to determine the elements for each of the eight description areas to be transcribed from the resource to the bibliographic record. The elements of description in the rules provide for a maximum set of information. Therefore, to accommodate the needs of libraries varying in purpose and size, AACR2 defines three different levels of description, which reflect Cutter's proposal of three different description levels, i.e. short, medium and full (Cutter, 1904).

Rules 1.0D1, 1.0D2 and 1.0D3 define the three recommended levels of description, each containing those elements that must be given as a minimum by agencies choosing that level of description.

2.4.7.1   First level (rule 1.0D1)

Title proper / first statement of responsibility, if different from main entry heading in form or number or if there is no main entry heading. - Edition statement. - Material (or type of publication) specific details. - First publisher, etc., date of publication, etc. - Extent of item. - Note(s). - Standard number.

2.4.7.2   Second level (rule 1.0D2)

Title proper [general material designation] = Parallel title : other title information / first statement of responsibility ; each subsequent statement of responsibility. - Edition statement / first statement of responsibility relating to the edition. - Material (or type of publication) specific details. - First place of publication, etc. : First publisher, etc., date of publication, etc. - copyright. - Extent of item : other physical details ; dimensions. - (Title proper of series / statement of responsibility relating to series, ISSN of series ; numbering within the series. Title of subseries, ISSN of subseries ; numbering within subseries). - Note(s). - Standard number.

2.4.7.3   Third level (rule 1.0D3)

For the third level of description, include all elements set out in the following rules that are applicable to the item being described.

The form of the levels of description refers to card catalogue entries. But the punctuation within the elements of an area of description is similar in electronic records as well. If some of the elements that a level requires are not applicable in an item, e.g. a parallel title, they are simply ignored and the rest of the elements are transcribed in the predefined order. Further, the note area and the standard number are usually written, even in card catalogue entries, on new lines.

Examples

First level
Data structures and algorithms in C++ / Michael T. Goodrich. - 2nd ed. - Hoboken, N.J. : Wiley, 2011. - xxii, 714 p.
Includes bibliographical references and index
ISBN 9780470383278

Second level
Data structures and algorithms in C++ [text] / Michael T. Goodrich, Roberto Tamassia, David M. Mount. - 2nd ed. - Hoboken, N.J. : Wiley, 2011. - xxii, 714 p. : ill. ; 24 cm.
Includes bibliographical references and index
ISBN 9780470383278

2.4.8   Outline of the descriptive cataloguing process using AACR2

Having described the structure and rationale of AACR2, the cataloguing steps need to be placed in a logical order. The core stages in original cataloguing are described below.

1 Receive the item and identify the appropriate chapter in AACR2 for the item (e.g. chapter 2 for a book, chapter 3 for a map etc.).
2 Identify the chief source of information for the item, based on the general rules of the respective chapter (rule X.0B).
3 Determine the level of description that is suitable for your library (rule 1.0B).
4 Use chapter 1 and the chapter for the type of material in hand to transcribe the information from the chief source of information to the bibliographic record. This stage has to be divided into eight steps, as many as the areas of description:
   4.1 Use rules 1.1 in combination with rules X.1 to transcribe the information for the *Title and statement of responsibility* area of description.
   4.2 Use rules 1.2 in combination with rules X.2 to transcribe the information for the *Edition* area of description.
      . . .
   4.8 Use rules 1.8 in combination with rules X.8 to transcribe the information for the *Standard number and terms of availability* area of description.

5 Transcribe the identified data to the catalogue using the correct punctuation. This step depends on the form of the catalogue:
   5.1 In a card catalogue the information will be arranged as is shown in the 'levels of description' section above.

5.2 In an electronic catalogue the data are entered under the proper MARC 21 tags. Typically, this translates to entering the data into some text boxes in a form and the software constructs the electronic record.

6 Determine the main entry heading and the added entry headings and their authorized forms by consulting chapters 21 to 26 of AACR2 and the authority file of your library.

The above steps are the basic actions performed in original cataloguing. In copy cataloguing, however, there are a range of tools that can speed up the process.

2.5 Summary

The preceding sections have introduced the evolution of codes for descriptive cataloguing and focused on AACR2. AACR2 consists of chapters 1–13, chapters 21–26 and five appendices. It contains rules for transcribing the information from the main source to the bibliographic record and for identifying the access points. Cataloguers have to identify the chief source of information and the appropriate level of description and then follow the rules for transcribing the elements in each of the eight areas of description.

The next two chapters analyse in more depth, and present step-by-step examples of, the cataloguing process with AACR2. The new code RDA, which is intended to replace AACR2, is examined in Chapter 5.

2.6 Review questions

1 What is the purpose of descriptive cataloguing?
2 What do you know about Panizzi's rules?
3 Discuss briefly the evolution of AACR2.
4 What is the International Standard Bibliographic Description (ISBD)?
5 Which are the eight description areas defined in ISBD?
6 Describe briefly the parts of AACR2.
7 What is the purpose of chapter 1 and of chapters 2–12 of AACR2?
8 Describe the utility of the general rules (rules 1.0) of chapter 1 of AACR2.
9 What is the purpose of rules 1.1–1.8 in AACR2?
10 Explain the meaning of the numbers and characters in 'Rule 1.4C'.
11 What is the scope of chapter 13 of AACR2?
12 What problem is addressed by the rules for authorized forms of headings for persons (chapter 22)?
13 What is the purpose of chapter 25 of AACR2?
14 Describe the role of Appendices A and B of AACR2.
15 What is a chief source of information in AACR2?
16 Which is the chief source of information in Printed Materials, Atlases and Graphic Materials?
17 What is the punctuation for delimiting the distinct areas of description in a bibliographic record?
18 What do square brackets ([ ]) mean in a bibliographic record?
19 Why are there three levels of description in bibliographic records?
20 What are the basic stages of item description in descriptive cataloguing?

2.7   Practical exercises

1 Supply the missing punctuation in the following descriptions:
  a. Greek life and thought from the age of Alexander to the Roman conquest___by
      J. P. Mahaffy___New York : Arno Press___1976___xxxviii___600 p.
      ISBN 0405073186
  b. Data structures and algorithms in C++___Michael T. Goodrich___2nd ed___Hoboken,
      N.J.___Wiley, 2011. - xxii___714 p.___Includes bibliographical references and
      index___ISBN 9780470383278

2 Produce a first-level description using the elements provided below:
    Title: Cataloging and classification
    Subtitle: An introduction
    Author: Lois Mai Chan
    Edition: 2nd
    Published in New York by McGraw-Hill in 1994
    Pages: xxii, 519 p., ISBN 0070105065

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AACR2 general rules and rules for books

3

3.1 Introduction

The latest update of AACR2 (2005) begins with a summary of rule revisions and a general introduction which explains the structure of the rules, the structure of the main and alternative entries, the role of the appendices and the significance of the examples given in the rules. These topics are also organized in the form of rules, i.e. rules 0.1 to 0.14.

Chapter 1 (General Rules for Description) of AACR2 includes general rules applicable to any kind of material. Chapters 2–12 are structured according to chapter 1 but refine and extend the instructions of chapter 1 to cover the unique characteristics of specific materials. However, the instructions in these chapters do not repeat what is covered in chapter 1; they simply refer back to the rules of chapter 1, so as to avoid repetition. Therefore, as already explained in the previous chapter of this book, to describe a specific type of material the cataloguer is obliged to consult both chapter 1 of AACR2 and the chapter on that specific material.

Selected rules and examples for each of the eight areas of description are presented in the following sections. The basic rules come from chapter 1 of AACR2 but specific excerpts from chapter 2 (Books, Pamphlets, and Printed Sheets) are included to cover the additional characteristics of books. First, a brief overview of the general rules of chapters 1 and 2 is provided.

3.2 Overview of the general rules 1.0 and 2.0

The general rules deal with punctuation and the decisions to be taken prior to cataloguing. Essentially, they concern the decision on the chief source of information and the level of description suitable for the purposes and the size of your library. Most of the general rules 2.0 for books simply refer to the general rules 1.0.

Rule **1.0A1** states that 'The source(s) of information for a bibliographic description of a resource is dependent on the aspect of the resource being described.' General instructions for sources of information in single or multipart resources are also provided. The definition of the chief source of information, i.e. the preferred source of data for transcribing the bibliographic description, is also provided in rule **1.0A3**.

The above rules are quite broad and therefore it is necessary to consult rule **2.0B1** for printed monographs. This rule states that the chief source of information is the title

page (and the title page verso). The rule also instructs cataloguers on what alternatives to use when a title page is absent from a book.

Rule **1.0B** relates to the organization of the description and rule **1.0B1** defines the eight areas of description. Rule **1.0C** deals with punctuation and **1.0C1** states the specific sequence of marks used to separate the areas of description and instructs cataloguers on where to find additional punctuation to delimit the elements within an area. Information not coming from the chief source of information should be included in *square brackets* ([ ]). Examples of these instructions are provided below.

3.2.1 Rule 1.0C1 (selected parts of the rule)

Precede each area, other than the first area, or each occurrence of a note or standard number, etc., area, by full stop space dash space *(. -) unless the area begins a new paragraph.*

Precede or enclose each occurrence of an element of an area with standard punctuation prescribed at the head of each section of this chapter [i.e. chapter 1 of AACR2].

Indicate an interpolation (i.e., data taken from outside the prescribed source(s) of information) by enclosing it in square brackets ([ ]).

Rule **1.0D** specifies the three levels of description, presented in the previous chapter of this book.

Rule **1.0E** concerns the language and script of the description and in general states that the information transcribed from the item itself should be given in the language and script in which it appears on the item.

Rule **1.0 F** concerns any inaccuracies appearing on the source of information. The error should be transcribed as it appears in the item and followed either by *[sic]* or by *i.e.* and the correction within square brackets. Some examples of errors on the source of information, provided in the AACR2 text, are given below.

Examples of inaccuracies

1 *Title on the item:* The wolrd of television
  Transcribed title: The wolrd [sic] of television

2 *Title on the item:* A nev mechanism for transnational media complaints
  Transcribed title: A nev [i.e. new] mechanism for transnational media complaints

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The last rule, **1.0G**, concerns accents and other diacritical marks.

3.2.2 Rule 1.0G (selected parts of the rule)

Add accents and other diacritical marks that are not present in the data found in the source of information in accordance with the usage of the language used in the context.

3.3   Area 1: Title and statement of responsibility

The first area of description deals with the title and the person(s) or corporate body(ies) responsible for the resource. Authors, editors and illustrators are typical examples of persons who hold responsibility for an item. Clearly, area 1 of description is the most important area, as without it there is really nothing to identify the item.

The area is divided into the following rules, each containing a few sub-rules:

1.1A. Preliminary rule
1.1B. Title proper
1.1C. General material designation
1.1D. Parallel titles
1.1E. Other title information
1.1F. Statements of responsibility
1.1G. Items without a collective title

Punctuation and the sources of information are specified in rules **1.1A1** and **1.1A2**. For instance, the *title page* and the *title page verso* are the sources of information for books. The following are some examples of punctuation instructions.

3.3.1 Rule 1.1A1 (selected parts of the rule)

Enclose the general material designation in square brackets ([ ]).
Precede each parallel title by an equals sign (=).
Precede the first statement of responsibility by a diagonal slash (/).
Precede each unit of other title information by a colon (:).

3.3.2   Title proper (rule 1.1B)

Title proper is the terminology used in AACR2 for the title of the item to be catalogued. The title is compulsory, which means that even if the item does not have a title, you must provide one, and include it in square brackets since it does not come from the prescribed source of information (general rule 1.0C1). The most important instructions of each rule are reproduced and explained below.

1.1B1 (selected parts of the rule)

Transcribe the title proper exactly as to wording, order, and spelling, but not necessarily as to punctuation and capitalization.
An alternative title is part of the title proper. Precede and follow the word or *(or its equivalent in another language) introducing an alternative title by a comma. Capitalize the first word of the alternative title.*
If the title proper as given in the chief source of information includes the punctuation marks . . . or [ ], replace them by - and ( ), respectively.

As a general interpretation of this rule, the title should be written as in an ordinary sentence, where the first letter of the first word is capitalized and the other

words are in lower case, even if the title on the item is in capital letters. Obviously, the first letter of country and person names or words like God or Allah should be capitalized.

The cataloguer is instructed to consult appendix A to decide on capitalization and issues relating to accents and diacritical marks.

Alternative titles are an old practice which is rarely used today. The alternative title should be handled as instructed in this rule and not as other title information, which is dealt with later in rule 1.1E. The two titles should be separated by *or*, which is preceded and followed by commas.

If the punctuation mark ... (*ellipses*) is part of the title, then the dots must be replaced by a dash (-). In some online catalogues the dots are replaced by two successive dashes (--). The square brackets must be replaced by parentheses. This is because, in AACR2 encoding, the ellipses are used to denote an omission and the square brackets to indicate that the data are not taken from the chief source of information.

Examples of title proper

1 **Title on the item:** BUSINESS COMMUNICATIONS
Transcribed title: Business communications

2 **Title on the item:** The Media, Cultural Control and Government in Singapore
Transcribed title: The media, cultural control and government in Singapore

3 **Title on the item:**
 THE NEWCASTLE RIDER,
 OR
 DUCKS AND PEASE
Transcribed title:
 The Newcastle rider, or, Ducks and pease

4 **Title on the item:**
 HOW TO KEEP WELL
 OR
 THE PRESERVATION OF HEALTH AND THE RECOGNITION OF DISEASE
Transcribed title:
 How to keep well, or, The preservation of health and the recognition of disease

5 **Title on the item:**
 When a Line Bends...
 A Shape Begins
Transcribed title: When a line bends-a shape begins

6 **Title on the item:**
 If I Have to Tell You
 One More
 Time...
Transcribed title: If I have to tell you one more time-

> **1.1B2.** *If the title proper includes a statement of responsibility or the name of a publisher, distributor, etc., and the statement or name is an integral part of the title proper, transcribe it as part of the title proper.*

Examples of title proper including statement of responsibility

1 Title on the item:
JANE FONDA'S
WORKOUT BOOK
Transcribed title:
Jane Fonda's workout book

2 Title on the item: Disney BEDTIME FAVORITES
Transcribed title: Disney bedtime favorites

3.3.3 General material designation (rule 1.1C, optional addition)

The general material designation (GMD) is an *optional* characterization of the type of the material to be catalogued. For example, if it is a book, then the GMD is *text*. If an item contains parts belonging to materials falling into two or more categories (e.g. text and audio) then the GMD is *multimedia* or *kit*.

AACR2 provides two lists of general material designations. Cataloguers in British agencies should use entries from the list 1 and cataloguers from Australian and North American agencies should consult list 2 (Table 3.1).

GMD is added after the title proper in square brackets and before parallel titles and other title information. Further, rule **1.1C1** instructs us to add *(large print)* or *(tactile)* for materials for the visually impaired to any term in list 2. The term *(braille)* may be added to any term of list 2, with the exception of the designators *braille* and *text*

Table 3.1 General material designations

List 1 (Britain)	List 2 (Australia, Canada, United States)	
braille	activity card	microscope slide
cartographic material	art original	model
electronic resource	art reproduction	motion picture
graphic	braille	music
manuscript	cartographic material	picture
microform	chart	realia
motion picture	diorama	slide
multimedia	electronic resource	sound recording
music	filmstrip	technical drawing
object	flash card	text
sound recording	game	toy
text	kit	transparency
videorecording	manuscript	videorecording
	microform	

Examples of GMD addition to title proper

Business communications [text]
Disney bedtime favorites [text]
Finding Nemo [sound recording]
Finding Nemo [text]
Distinct communities, diverse populations, different futures [electronic resource]
Classic American short stories [text (large print)]

In a North American cataloguing agency:
Finding Nemo read-along storybook and cd [kit]
In a British cataloguing agency:
Finding Nemo read-along storybook and cd [multimedia]

3.3.4   Parallel titles (rule 1.1D)

A parallel title is a second title in another language. Parallel titles (in general there could be more than one) are transcribed in the record only if a second- or third-level description is used. They are copied after the proper title using the *equals* sign preceded and followed by a *space* (=). All the titles must exist in the chief source of information. Typically, parallel titles appear in conference proceedings, journals, PhD theses and books with text in two languages. The first letter of the parallel title should be capitalized and should be formatted as instructed in rule 1.1B.

The main rules for how to handle parallel titles are given below.

> **1.1D1.** *Transcribe parallel titles in the order indicated by their sequence on, or by the layout of, the chief source of information.*

> **1.1D2.** *In preparing a second-level description (see 1.0D2), give the first parallel title. Give any subsequent parallel title that is in English.*

Examples of parallel titles

Tamiḻ Ilattīṉ pālam [text] = Bridge between Tamil and Latin
Cuerpos y fronteras en América Latina [text] = Bodies and borders in Latin America
Trefn yr offeren [text] = The order of Mass

In the examples above, the titles are in Tamil and English, Spanish and English, and Welsh and English, respectively. The examples take into account the guidelines of rules 1.1B and 1.1C, discussed above.

3.3.5   Other title information (rule 1.1E)

Other title information is considered as an explanation or elaboration of the title and is what is basically known as the subtitle of the work. This information is transcribed after the title proper and the GMD and is preceded by *space colon space* (:). The basic rules for other title information are:

1.1E1. *Transcribe all other title information appearing in the chief source of information according to the instructions in l.1B.*

1.1E5. *Transcribe other title information following the whole or part of the title proper or the parallel title to which it pertains.*

1.1E6. *If the title proper needs explanation, supply a brief addition as other title information, in the language of the title proper.*

The above rules state that the form of other title information should abide by the instructions for title proper and that it is transcribed after title proper.

Rule 1.1E5 gives the cataloguer the option either to first transcribe the title proper and the parallel title and then the other title information in both languages or to copy the title proper and the other title information and then the parallel title and other title information in this language (see third example below).

If needed, the cataloguer can add an explanation as other title information, in square brackets (rule 1.1E6 – see the fourth example below).

Examples of other title information

1 **Title and other title information on the item:**
   THE HISTORY OF THE ANCIENT WORLD
   FROM THE EARLIEST ACCOUNTS TO THE FALL OF ROME
   Transcribed title:
   The history of the ancient world [text] : from the earliest accounts to the fall of Rome

2 **Title and other title information on the item:**
   ESSENTIALS OF SOCIOLOGY
   A DOWN-TO-EARTH APPROACH
   Transcribed title:
   Essentials of sociology : a down-to-earth approach

3 **Title and other title information on the item:**
   FFOTOGRAFFAU
   o Gasgliadau Cymreig
   PHOTOGRAPHS
   from Welsh collections
   Arddangosfa Deithiol Cyngor Celfyddydau Cymru
   A Welsh Arts Council Touring Exhibition
   Transcribed title:
   Ffotograffau o gasgliadau Cymreig = Photographs from Welsh collections : arddangosfa deithiol cyngor celfyddydau Cymru = a Welsh arts council touring exhibition
   The title could be also transcribed as:
   Ffotograffau o gasgliadau Cymreig : arddangosfa deithiol cyngor celfyddydau Cymru = Photographs from Welsh collections : a Welsh arts council touring exhibition

4 **Title on the item:**
   SUSTAINABLE REAL ESTATE DEVELOPMENT CONFERENCE 2009
   Transcribed title:
   Sustainable real estate development conference 2009 : [proceedings]

Note: The general material designation is an optional addition and it is omitted in these four examples.

3.3.6   Statements of responsibility (rule 1.1F)

This subarea deals with the transcription of the names of authors, editors, illustrators, composers, artists etc. who contributed to the development of the resource.

The first statement of responsibility is copied after the title and other title information and parallel titles and is preceded by *space slash space* (/). AACR2 instructs the cataloguers to precede each subsequent statement of responsibility by *space semicolon space* (;). For instance, authors and editors with different roles and thus different responsibilities are separated by semicolon. Below, we discuss the basic rules for transcribing the statements of responsibility.

> **1.1F1.** *Transcribe statements of responsibility appearing prominently in the item in the form in which they appear there. If a statement of responsibility is taken from a source other than the chief source of information, enclose it in square brackets.*

A basic principle is that the cataloguer transcribes the statements of responsibility as they appear in the chief source of information. For example, if 'by' precedes an author's name, then 'by' is also copied in the statement of responsibility.

Examples of statements of responsibility

1 *Data on the chief source of information:*
      Sociology
      CHRISTOPHER TOWNROE · GEORGE YATES
   Transcribed title and statement of responsibility:
      Sociology [text] / Christopher Townroe, George Yates

2 *Data on the chief source of information:*
      SOCIOLOGY
      JAMES FULCHER AND JOHN SCOTT
   Transcribed title and statement of responsibility:
      Sociology [text] / James Fulcher and John Scott

3 *Data on the chief source of information:*
      Gypsy politics and
      Traveller identity
      edited by Thomas Acton
   Transcribed title and statement of responsibility:
      Gypsy politics and traveller identity [text] / edited by Thomas Acton

4 *Data on the chief source of information:*
      BEN and ME
      A New and Astonishing LIFE of BENJAMIN FRANKLIN
      As written by his Good Mouse AMOS
      Lately Discovered, Edited & Illustrated by ROBERT LAWSON
   Transcribed title and statement of responsibility:
      Ben and me : a new and astonishing life of Benjamin Franklin as written by his good mouse
      Amos [text] / lately discovered, edited & illustrated by Robert Lawson

5 *Data on the chief source of information:*
> THE TORTOISE
> AND THE EAGLE
> RETOLD BY TANYA MUNSHI
> ILLUSTRATED BY SREELAL A. G.

Transcribed title and statement of responsibility:
> The tortoise and the eagle [text] / retold by Tanya Munshi ; illustrated by Sreelal A. G.

1.1F5. If a single statement of responsibility names more than three persons or corporate bodies performing the same function, or with the same degree of responsibility, omit all but the first of each group of such persons or bodies. Indicate the omission by the mark of omission (. . .) and add et al. *(or its equivalent in a nonroman script) in square brackets.*

If an item has, for example, four editors and is coordinated by four research institutes, then only the first editor and the first institute are copied.

Examples of statements of responsibility

1 *Data on the chief source of information:*
> Management of Complex Cardiovascular Problems
> THE EVIDENCE-BASED MEDICINE APPROACH
> Edited by Thach N. Nguyen, Dayi Hu, Moo-Hyun Kim, and Cindy Grines

Transcribed title and statement of responsibility:
> Management of complex cardiovascular problems [text] : the evidence-based medicine approach / edited by Thach N. Nguyen . . . [et al.]

2 *Data on the chief source of information:*
> Lessons from Amazonia
> THE ECOLOGY AND CONSERVATION OF A FRAGMENTED FOREST
> Edited by Richard O. Bierregaard, Jr., Claude Gascon, Thomas E. Lovejoy, and Rita Mesquita
> Foreword by Edward O. Wilson
> Prologue by Eneas Salati

Transcribed title and statement of responsibility:
> Lessons from Amazonia [text] : the ecology and conservation of a fragmented forest / edited by Richard O. Bierregaard, Jr. . . . [et al.] ; foreword by Edward O. Wilson ; prologue by Eneas Salati

1.1F8. Add a word or short phrase to the statement of responsibility if the relationship between the title of the item and the person(s) or body (bodies) named in the statement is not clear.

This means that the cataloguer can add a short word or phrase to clarify the role of the persons in the statement of responsibility.

Example of statement of responsibility

Data on the chief source of information:
HANDBOOK OF RESEARCH ON
E-learning Standards and Interoperability
Frameworks and Issues
FOTIS LAZARINIS, STEVE GREEN, ELAINE PEARSON
Transcribed title and statement of responsibility:
Handbook of research on e-learning standards and interoperability [text] : frameworks and issues
/ [edited by] Fotis Lazarinis, Steve Green, Elaine Pearson

Note: The [edited by] is added to the statement of responsibility because the persons named in
the chief source of information are actually the editors and not the authors.

1.1F10. *If an item has parallel titles but a statement(s) of responsibility in only one
language or script, transcribe the statement of responsibility after all the parallel
titles or other title information.*

The rule states that if the statement(s) of responsibility is in one language, then it
should be transcribed after the title and parallel titles, while if the statement(s) of
responsibility is in more than one language, then each should be transcribed after
the title to which it relates. The first three examples below relate to the first case,
i.e. statement(s) of responsibility in one language, and the last three examples relate
to the second case, i.e. statement(s) of responsibility in more languages.

Examples of statements of responsibility

Lotynų-lietuvių kalbų žodynas [text] = Dictionarium Latino-Lituanicum / Kazimieras Kuzavinis

Cuerpos y fronteras en América Latina [text] = Bodies and borders in Latin America / editors: Silje
Lundgren, Thaïs Machado-Borges, Charlotta Widmark

Màs critigol [text] : effaith a dyfodol cynrychiolaeth menywod yng nghynulliad cenedlaethol
Cymru = Critical mass : the impact and future of female representation in the national assembly
for Wales / John Osmond

Words of the true peoples : anthology of contemporary Mexican indigenous-language writers / edited
by Carlos Montemayor and Donald Frischmann ; photography by George O. Jackson, Jr. = Palabras
de los seres verdaderos : antología de escritores actuales en lenguas indígenas de México / editado
por Carlos Montemayor and Donald Frischmann ; fotografía de George O. Jackson, Jr.

Do you speak doctor? : international medical language guide : English-Spanish, Spanish-English
(Latin-American) / by Gregg M. Cox ; illustrations by Dennis D. Horan = Habla usted médico? :
guía internacional del lenguage del médico : inglés-español, español-inglés (latino-americano) /
por Gregg M. Cox ; láminas por Dennis D. Horan

La coopération internationale en réponse aux besoins prioritaires des universités latino-améri-
caines : cinquième Congrès, Mérida 1987 / Organisation universitaire interaméricaine = Interna-
tional cooperation as an answer to the priority needs of Latin-American universitiesn : fifth
Congress / Inter-American Organization for Higher Education

3.3.7 Items without a collective title (rule 1.1.G)

These rules deal with resources made up of more than one individual works but they lack an overall title. This is quite rare in modern books, however. The rules state either to use the title of the predominant part of the work or to make a separate description for each separately titled work, linking the separate descriptions with notes.

3.3.8 Examples of partial book descriptions: area 1

At the end of each area, we present some descriptions that are partially completed with elements covered in the aforementioned instructions. These descriptions are progressively completed in the following sections as we elaborate the rules for the areas that follow. The selected examples in Table 3.2 illustrate common cases that a cataloguer will confront. Next to each record there may be some comments to help the reader understand the current state of the record.

Table 3.2 Book descriptions for area 1

Partially completed book description	Comments
• Business communications [text] / Claudia Rawlins	*Title proper, GMD, author*
• The media, cultural control and government in Singapore [text] / Terence Lee	*Title proper, GMD, author*
• Classic American short stories [text (large print)] : 17 stories from Hawthorne to Fitzgerald / edited by Clarence C. Strowbridge	*Title proper, GMD large print, other title information, editor*
• Essentials of sociology [text] : a down-to-earth approach / James M. Henslin	*Title proper, GMD, other title information, author*
• Fractures, dislocations and sprains [text] / Philip Wiles	*Title proper, GMD, author*

3.4 Area 2: Edition

The second area of description contains the data about the edition of the resource. If it is a first edition, then no data are transcribed and the cataloguer moves on to the next area. The respective rules for books refer to the general rules of chapter 1 of AACR2, so we focus on the rules of chapter 1.

The area is divided into the following subareas:

1.2A. Preliminary rule
1.2B. Edition statement
1.2C. Statements of responsibility relating to the edition
1.2D. Statement relating to a named revision of an edition
1.2E. Statements of responsibility relating to a named revision of an edition

The punctuation is specified in rule **1.2A**. For example, it is stated that the edition area must be preceded by *full stop space dash space* (. -). Other individuals or corporate bodies may be responsible for the new edition and therefore the first statement of responsibility following an edition statement should be preceded by a *diagonal slash* (/). Should the information about the edition be taken from a source different from the chief source of information, it must be enclosed in square brackets.

3.4.1   Edition statement (rule 1.2B)

The basic rule for transcribing the edition is 1.2B1. According to this, the cataloguer has to transcribe the edition using the appropriate abbreviations for the words used to indicate the edition.

> **1.2B1.** *Transcribe the edition statement as found on the item. Use abbreviations as instructed in appendix B and numerals as instructed in appendix C.*

The usual abbreviations for the edition in the English language are:

edition	ed.
revised	rev.
revised edition	rev. ed.
corrected	corr.
reprinted	repr.
reproduced	reprod.
enlarged	enl.

Examples of edition

Contemporary society [text] : an introduction to sociology / Jackson Toby. - 2nd ed.

Understanding sport [text] : a socio-cultural analysis / John Horne . . . [et al.]. - 2nd ed.

The Galleon history of Corregidor [text] / by Alfonso J. Aluit. - 4th rev. ed.

A history of British butterflies [text] / Francis Orpen Morris. - 8th ed., newly rev., corr., and enl.

3.4.2   Statements of responsibility relating to the edition (rule 1.2C)

New editions are often edited or expanded or corrected by different individuals or corporate bodies. In these cases the statements of responsibility are transcribed after the edition and the first statement of responsibility is preceded by *space diagonal slash space* (/). In general, the transcription of the statements of responsibility follows the rules of subarea 1.1F. If there is a doubt about whether a statement(s) of responsibility concerns a revised edition or all editions, then the statement should be transcribed in the title and statement of responsibility area (i.e. area 1).

The basic rules for transcribing the statements of responsibility relating to the edition are the following:

> **1.2C1.** *Transcribe a statement of responsibility relating to one or more editions, but not to all editions, of a given work following the edition statement if there is one. Follow the instructions in 1.1 F for the transcription and punctuation of such statements.*

> **1.2C2.** *In case of doubt about whether a statement of responsibility applies to all editions or only to some, or if there is no edition statement, give such a statement in the title and statement of responsibility area.*

Examples of edition and statements of responsibility relating to the edition

Fractures, dislocations and sprains [text] / Philip Wiles. - 2nd ed. / edited and revised by Rodney Sweetnam

Theories of personality : primary sources and research [text] / Calvin S. Hall, Gardner Lindzey. - 2nd ed. / edited by Gardner Lindzey, Calvin S. Hall, Martin Manosevitz

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Subareas **1.2D** and **1.2E** concern rare cases where there is revision of a specific edition or there is a separate statement(s) of responsibility for a revision of a new edition, and therefore is less practical to expound.

3.4.3 *Examples of partial book descriptions: up to area 2*

As explained at the end of area 1, the following descriptions are progressively filled in as we explain the new rules. The descriptions shown in Table 3.3 contain elements resulting from areas 1 and 2.

Table 3.3 Book descriptions up to area 2

Partially completed book description	Comments
• Business communications [text] / Claudia Rawlins	*1st edition – no elements added*
• The media, cultural control and government in Singapore [text] / Terence Lee	*1st edition – no elements added*
• Classic American short stories [text (large print)] : 17 stories from Hawthorne to Fitzgerald / edited by Clarence C. Strowbridge	*1st edition – no elements added*
• Essentials of sociology [text] : a down-to-earth approach / James M. Henslin. - 3rd ed.	*3rd edition*
• Fractures, dislocations and sprains [text] / Philip Wiles. - 2nd ed. / edited and revised by Rodney Sweetnam	*2nd edition, different responsibility*

3.5 Area 3: Material (or type of publication) specific details

This area concerns specific details of cartographic materials (chapter 3), music (chapter 5) and continuing resources (chapter 12). For example, the scale of maps is transcribed in this area, e.g. '. - *Scale 1:3,000,000*. - '. The area is preceded and followed by *full stop space dash space* (. -).

Clearly, this area cannot be described in Chapter 1 of AACR2 as it applies only to certain formats and the rules cannot be generalized. For consistency in numbering, though, the X.3 area is included in all chapters, but it is elaborated only in certain ones.

3.6 Area 4: Publication, distribution, etc.

In this area the cataloguer transcribes the details about where, when and by whom the item was published and distributed. The general pattern for copying this information to the bibliographic record is: *Place of publication : publisher, year*. However, the rules provide for more cases where, for example, there are two publishers, or a publisher and a different distributor etc. Area 2.4 for books points to rules 1.4 for copying the publisher details.

Area 1.4 is divided into the following rules:

1.4A. Preliminary rule
1.4B. General rule
1.4C. Place of publication, distribution, etc.
1.4D. Name of publisher, distributor, etc.
1.4E. Statement of function of publisher, distributor, etc.
1.4F. Date of publication, distribution, etc.
1.4G. Place of manufacture, name of manufacturer, date of manufacture

The preliminary (1.4A) and the general (1.4B) rules deal with punctuation and some general guidelines about using abbreviations in the names of organizations, e.g. 'Dept. of Spanish' instead of 'Department of Spanish'. Areas 1.4C to 1.4 F, which are the most important, are described below.

3.6.1 Place of publication, distribution, etc. (rule 1.4C)

> **1.4C1.** *Transcribe a place of publication, etc., in the form and the grammatical case in which it appears.*

The central rule for transcribing the place of publication is 1.4C1, which basically says to transcribe the place as it appears, e.g. *London*, *Canberra*, *New York* etc.

> **1.4C3.** *If the name of the country, state, province, etc., appears in the source of information, transcribe it after the name of the place if it is considered necessary for identification or ... to distinguish the place from others of the same name. ...*
> *Supply the name of the country, state, province, etc., if it does not appear in the source of information but is considered necessary for identification ...*

Based on the above rule, the country or state or province name should be added after the name of the place if it considered necessary to identify the place or to distinguish it from other places with the same name. If the addition does not appear in the chief source of information, then it should be enclosed in square brackets. For instance, in the following cases the country or state or province names were added by the cataloguer.

Examples of place of publication where the cataloguer added a country, state, etc. name

Transcribed data	*Explanation*
Athens, Greece	'Greece' appears in the chief source
Atlanta, Ga.	'Georgia' appears in the chief source
London [Ont.]	'Ontario' does not appear in the chief source and therefore it is in square brackets
[Great Britain]	No place appears in the chief source, but the cataloguer knows that it was published in Great Britain
[Stanford, Calif.]	No place appears in the chief source, but the cataloguer knows that it was published in Stanford, California

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1.4C5. *If two or more places in which a publisher, distributor, etc., has offices are named in the item, give the first named place . . . If the first named place and any place given prominence are not in the home country of the cataloguing agency, give also the first of any subsequently named places that is in the home country. Omit all other places.*

Rule 1.4C5 states that, in general, the cataloguer should use the first place named in the item for a publisher or distributor. However, if another place is more prominent or the cataloguing agency is located in a place named second or later in the order in the chief source, then this place should also be transcribed.

For example, the book *Genetic modification in the food industry: a strategy for food quality improvement*, edited by Sibel Roller and Susan Harlander, is published by Blackie Academic & Professional, which has offices (in the order named in the verso of the title page) in London, New York, Philadelphia and Weinheim. A cataloguing agency in Great Britain would transcribe only *London*, while an agency in USA would transcribe *London ; New York*.[1]

1.4C6. *If the place of publication, distribution, etc., is uncertain, supply the probable place in the English form of name if there is one, followed by a question mark.*
    . . .

    If no place or probable place can be given, give s.l. *(sine loco), or its equivalent in a nonroman script.*

If the cataloguer is not certain about the place of publication or distribution, then the place should be enclosed in square brackets and followed by a question mark. If no

place can be specified, then the acronym *s.l.* (*sine loco = without place*) should be copied in square brackets.

3.6.2   Name of publisher, distributor, etc. (rule 1.4D)

1.4D1. *Give the name of the publisher, distributor etc., following the place(s) to which it relates.*

1.4D5. Optionally*, give the name and, when appropriate, the place of a distributor, when the first named entity is a publisher.*

1.4D6. *If the name of the publisher, distributor etc., is unknown, give* s.n. *(*sine nomine = without a name*) or its equivalent in a nonroman script.*

The name of the publisher is copied after the place of publication, and the name of the distributor after the place of distribution. The place and the name of the publisher are delimited by *space colon space* (:). If two publishers or a publisher and a distributor are transcribed, then they are separated by *space semicolon space* (;).

Examples of place of publication where the place of publication is not certain or not known

Transcribed data	Explanation
[Italy?]	No place appears in the chief source and the cataloguer is not certain that Italy is the place of publication or distribution. If the cataloguer was certain about *Italy* then the question mark should be omitted, i.e. *[Italy]*
[s.l.]	No place is specified in the chief source and the cataloguer cannot specify or speculate some place.

Examples of place of publication/distribution and name of publisher/ distributor

Transcribed data	Explanation
Canberra : Australian National University Press	Place and publisher name
London : Dorling Kindersley	Place and publisher name
London ; New York : Stockton	Publisher has offices in London and New York and cataloguing is done by a US agency
Oxford : Clarendon Press ; New York : Oxford University Press	Two publishers or a publisher and a distributor.

If an item is distributed by another body, then the place and the name of the distributor should be transcribed after the publisher details and a phrase like 'Distributed by' should be used.

Examples of place of publication/distribution and name of publisher/distributor

London : Rough Guides ; New York : Distributed by Penguin Group
Stockholm : Grammofon AB BIS ; New York : Distributed by Qualiton Imports
[S.l.] : Bles *The place of publication is unknown*
Paris : [s.n.]   *The name of the publisher is unknown*
[S.l. : s.n.]   *The place and name of the publisher are unknown. The first 'S' is in capital and both abbreviations should be included in a single set of brackets, as emphasized in the general rule 1.0C1 on punctuation.*

3.6.3   Date of publication, distribution, etc. (rule 1.4F)

The date of publication or distribution is transcribed after the place and the name of the publisher or distributor. Only the year is copied in the record and it is preceded by *comma space* (,). The crucial rule for the date is 1.4F1.

> **1.4F1.** *For published items, give the date (i.e., year) of publication, distribution, etc., of the edition, revision, etc., named in the edition area.*
> *If there is no edition statement, give the date of the first publication of the edition to which the item belongs. Give dates in Western-style Arabic numerals.*
> *If the date found in the item is not of the Gregorian or Julian calendar, give the date as found and follow it with the year(s) of the Gregorian or Julian calendar.*

Interpreting the above rule, the cataloguer has to transcribe the year using only Arabic numerals. If the year is given in another, non-Arabic notation, then the year in this notation is transcribed and the year as an Arabic numeral is enclosed in square brackets. If a date is not taken from the chief source of information, then it is included in square brackets, as in all previous cases.

Examples of place of publication/distribution, name of publisher/distributor and date

Canberra : Australian National University Press, 1968
Oxford : Chandos Publishing, 2007
Frankfurt ; Lancaster : Ontos Verlag, 2007
London : Rough Guides ; New York : Distributed by Penguin Group, 2006
Stockholm, Sweden : Dept. of Social Anthropology, Stockholm University ; Södertälje, Sweden : Distributed by Almqvist & Wiksell, 2000

1.4F7. *If no date of publication, distribution, etc., copyright date, or date of manu-facture appears in an item, supply an approximate date of publication.*

The AACR2 text provides a number of examples where the year is not present and shows how to deal with this situation. Basically, the year should be enclosed in square brackets. If the cataloguer is not certain about the year, a question mark should be affixed. If the cataloguer is certain of a part of the year, then dashes should be used for the other numbers. Also *ca.* (i.e. circa) can be used in front of an estimated pub-lication year. AACR2 provides the following list of examples:

[1971 or 1972] *one year or the other*

[1969?] *probable date*

[ca. 1960] *approximate date*

[197-] *decade certain*

[197-?] *probable decade*

[18- -] *century certain*

[18- -?] *probable century*

[between 1906 and 1912] *use only for dates fewer than 20 years apart*

The cases shown in below are rare and concern primarily items published before the 1950s or much earlier. So, actually, there is no need for the beginner cataloguer to worry about this.

Examples of probable publication dates and/or places

Transcribed data	Explanation
[London?] : Information Service, [1951]	The cataloguer is certain about 1951. The cataloguer is not certain that the place of publication is London.
London : Central Office of Information, [1951?]	The cataloguer is not certain about 1951.
London : J. Fuller, [ca. 1750]	Approximation of the year.
Newport, Isle of Wight : P. J. Norris, [ca. 19- -]	Approximation of a certain century.

3.6.4 Examples of partial book descriptions: up to area 4

The descriptions shown below consist of elements stemming from areas 1.1, 1.2 and 1.4 (Table 3.4).

Table 3.4 **Book descriptions for areas 1.1, 1.3 and 1.4**

Partially completed book description	Comments
Business communications [text] / Claudia Rawlins. - New York : HarperPerennial, 1993 The media, cultural control and government in Singapore [text] / Terence Lee. - London : Routledge, 2010 Classic American short stories [text (large print)] : 17 stories from Hawthorne to Fitzgerald / edited by Clarence C. Strowbridge. - Mineola, N.Y. : Dover Publications, 2002 Essentials of sociology [text] : a down-to-earth approach / James M. Henslin. - 3rd ed. - Boston ; London : Allyn and Bacon, 2000 Fractures, dislocations and sprains [text] / Philip Wiles. - 2nd ed. / edited and revised by Rodney Sweetnam. - London : Churchill, 1969	*N.Y. appears in the chief source* *Cataloguing agency is in UK*

3.7 Area 5: Physical description

The physical description area is heavily dependent on the physical format of the object to be catalogued. Therefore the general rules 1.5 of chapter 1 refer to the rules X.5 of the chapter dealing with the physical format of the specific item, e.g. rules 2.5 for books, 3.5 for maps etc. Nevertheless, the general rules cover most of the usual cases of cataloguing a book, which is the main goal of the current text.

The contents of area 5 are:

1.5A. Preliminary rule
1.5B. Extent of item (including specific material designation)
1.5C. Other physical details
1.5D. Dimensions
1.5E. Accompanying material

The most significant subareas are X.5B, X.5C and X.5D, which deal respectively with the pagination and number of volumes, other details (e.g. illustrative material in books or production method, medium, material etc. in maps) and the dimensions of the item. In the following sections these subareas are examined and references to the more specific rules 2.5B, 2.5C and 2.5D for books are given whenever this is judged necessary.

3.7.1 Extent of item (rule 1.5B)

The first rule actually advises cataloguers to consult the respective area X.5B of the chapter dealing with the type of the material to be catalogued. For describing the dimensions of single-part books, rule 1.5B2 makes an explicit reference to rule 2.5B.

> **1.5B1.** *Record the extent of the item by giving the number of physical units in arabic numerals and the specific material designation as instructed in subrule .5B in the chapter dealing with the type of material to which the item belongs.*

> **1.5B2.** *Describe a single-part printed text item as instructed in 2.5B.*

3.7.1.1 Number of volumes and/or pagination (rule 2.5B)

The central rules for transcribing the pages of books are 2.5B2 and 2.5B5. In brief, the cataloguer has to enter the number of pages or another type of measurement unit followed by a term or an abbreviation, e.g. *327 p.* or *320 leaves* or *120 columns*.

> **2.5B2.** *Give the number of pages, leaves, or columns in terms of the numbered or lettered sequences in the volume. Give the last numbered page, leaf, or column in each sequence and follow it with the appropriate term or abbreviation.*

> **2.5B5.** *If the numbering within a sequence changes (e.g., from roman to arabic numerals), ignore the numbering of the first part of the sequence.*

The most usual metric for the extent of books is pages, thus the abbreviation *p.* is used after the number of pages, e.g. *160 p.* There are two common situations which cataloguers confront:

i. the book uses only Arabic numerals, so the number on the last numbered page is transcribed in the record, followed by *p.*, e.g. *256 p.*
ii. the book uses different notations, e.g. roman and arabic numerals:
    a. the first part of the book is numbered, for example, *i–vii* and the next part *1–224*. The transcribed data are: *vii, 224 p.*
    b. the first part of the book is numbered, for example, *i–vii* and the second part is numbered *8–224*. The roman numerals are ignored and the copied data are: *224 p.*

> **2.5B7.** *If the pages or leaves of a volume are unnumbered and the number of pages or leaves is readily ascertainable, give the number in square brackets. If the number is not readily ascertainable, estimate the number of pages or leaves and give that estimated number without square brackets and preceded by* ca.

In some books, especially books for children, the pages are usually unnumbered and the cataloguer has to count them. In this instance, the page number is enclosed in square brackets, e.g. *[20] p.* If the book contains additional material, e.g. a detachable craft, the number may be more difficult to decide. The number of pages is then preceded by *ca.* and is not enclosed in square brackets, e.g. *ca. 20 p.*

3.7.2 Other physical details (rule 1.5C)

Again, the cataloguer is instructed to consult the rules X.5C of the appropriate AACR2 chapter. For books, the subarea 2.5C is entitled *Illustrative matter* and deals with the existence of illustrations, maps, forms etc.

3.7.2.1 Illustrative matter (rule 2.5C)

Based on the instructions below, the abbreviations *ill.*, or *col. ill.* if the illustrations are coloured, are used after the number of pages. The descriptions may also be more detailed if needed, e.g. *ill. (some col.)* or *ill. (chiefly col.)*.

> ***2.5C1.*** *Give* ill. *for an illustrated printed monograph. Tables containing only words and/or numbers are not illustrations. Disregard illustrated title pages and minor illustrations.*
>
> ***2.5C3.*** *Describe coloured illustrations as such if considered to be important.*

The last rules apply also to maps, portraits (*ports.*), facsimiles (*facsim.*) and other types of illustrative material. Illustrations are the most usual type, however.

3.7.3   Dimensions (rule 1.5D)

Transcription of the dimensions for books is governed by rules **2.5D**. Rule **1.5D1** directs cataloguers to chapter 2.

3.7.3.1   Dimensions (rule 2.5D)

Rules 2.5D1 and 2.5D2 instruct cataloguers to give the height of the book in centimetres, rounding it up the next integer, e.g. *18 cm* in the case of an item measuring between 17.1 and 18 cm.

If an item is less than 10 centimetres, then the height should be given in millimetres, e.g. *90 mm.* instead of *9 cm.*

> ***2.5Dl.*** *Give the height of the item in centimetres, to the next whole centimetre up (e.g., if an item measures 17.2 centimetres, give 18 cm.). Measure the height of the binding if the volume is bound. Otherwise, measure the height of the item itself. If the item measures less than 10 centimetres, give the height in millimetres.*
>
> ***2.5D2.*** *If the width of the volume is either less than half the height or greater than the height, give the height × width.*

If the width of a book is less than half the height or greater than the height, then both height and width must be transcribed, e.g. *21 x 26 cm.* instead of *21 cm.*

Examples of physical description (number of pages, illustrative matter, dimensions)

375 p. ; 30 cm.

viii, 151 p. ; 27 cm.

xii, 267 p. : ill. ; 25 cm.

32 p. : col. ill. ; 30 cm.

220 p. : ill., ports. ; 30 cm.

[22] p. : col. ill., col. maps ; 30 cm.

ca. 600 p. : ill. ; 25 cm.

xxi, 233 p. : ill. (chiefly col.) ; 24 cm.

8 p. : ill. ; 90 mm.

146 p. ; 90 mm. x 19 cm.

xi, 276p. : ill. (some col.), maps (some col.), plans ; 21 cm.

65 p. : ill. ports. ; 30 x 48 cm

[96] p. : col. ill. ; 80 mm x 13 cm.

48 p. : ill. (chiefly col.) ; 21 x 26 cm.

ca. 600 p. : ill. ; 29 x 44 cm.

3.7.4 Examples of partial book descriptions: up to area 5

Continuing the examples described at the end of the previous area, the descriptions in Table 3.5 are completed with the physical details discussed for the current area.

Table 3.5 Partial book descriptions up to area 5

Partially completed book description	Comments
Business communications [text] / Claudia Rawlins. - New York : HarperPerennial, 1993. - x, 209 p. ; 24 cm.	*First 10 (x) pages use roman numerals*
The media, cultural control and government in Singapore [text] / Terence Lee. - London : Routledge, 2010. - ix, 198 p. ; 24 cm.	*First 9 (ix) pages use roman numerals*
Classic American short stories [text (large print)] : 17 stories from Hawthorne to Fitzgerald / edited by Clarence C. Strowbridge. - Mineola, N.Y. : Dover Publications, 2002. - 519 p. ; 24 cm.	
Essentials of sociology [text] : a down-to-earth approach / James M. Henslin. - 3rd ed. - Boston ; London : Allyn and Bacon, 2000. - xxix, 475 p. : ill. (some col.), col. maps, ports. (some col.) ; 26 cm.	*Some coloured illustrations and portraits, coloured maps*
Fractures, dislocations and sprains [text] / Philip Wiles. - 2nd ed. / edited and revised by Rodney Sweetnam. - London : Churchill, 1969. - x, 133 p. : ill. ; 26 cm.	*First 10 (x) pages use roman numerals, illustrations*

3.8 Area 6: Series

Practically, a series consists of a group of separate items each of which has its own title and which are somehow related to one another, e.g. negotiate similar topics or are intended for the same age group or are targeted to the same educational level etc. The series has a collective title, applying to the group as a whole, and each item belonging to the group bears this collective title in addition to its own title.

    The most important elements in a series are the title of the series, the possible statement of responsibility relating to it and the numbering of the item within a series. The data for series have to be enclosed in *parentheses*. All of the contents of area 6 are:

3.8.1 Title proper of series (rule 1.6B)

The basic rule for transcribing the title of the series is 1.6B1, which instructs cataloguers to follow the guidelines given in rule 1.1B.

> **1.6B1.** *If an item is issued in a series, transcribe the title proper of the series as instructed in 1.1B.*

For example, the series title *PERSPECTIVES IN NANOTECHNOLOGY* is transcribed as *Perspectives in nanotechnology*.

3.8.2 Parallel titles and other title information of series (rules 1.6C. and 1.6D)

For parallel titles the cataloguer has to follow the instructions of the subarea 1.1D. Other title information is rarely copied to the bibliographic record, as it usually does not provide valuable information for identifying the series. If, however, it does convey some important information for the series, then it is copied after the title proper and is preceded by *space colon space* (:).

3.8.3 Statements of responsibility relating to series (rule 1.6E)

Again, the persons or corporate bodies held responsible for a series are transcribed, should they provide some information for identifying the series. If so, the same rules described in subarea 1.1F are used.

> **1.6E1.** *Transcribe statements of responsibility appearing in conjunction with the series title only if they are considered to be necessary for identification of the series. Follow the instructions in 1.1F when transcribing a statement of responsibility relating to a series.*

In practice, statements of responsibility are transcribed after the title of a series when the title proper is not very descriptive and cannot be used for identifying the

series. For instance, a series title like *Report* or *Conference* is not explanatory, so the body or the person responsible for it should also be copied.

   e.g. Conference series / Institute of Physics

3.8.4   ISSN of series (rule 1.6F)

Some series are assigned an ISSN (International Standard Serial Number). This is copied after the information described earlier and after *comma space* (,).

   e.g. Public administration series bibliography, ISSN 0193-970X

3.8.5   Numbering within series (rule 1.6G)

Numbering of the individual items is a common feature within a series. The number is transcribed after the previous data and is preceded by *space semicolon space* (;). The basic rule for copying the number is 1.6G1, which basically instructs us to copy what is on the item and to use abbreviations if possible. For example, *number* should be abbreviated to *no.*, *volume* to *v.*, etc.

> **1.6G1.** *Give the numbering of the item within the series in the terms given in the item. Use abbreviations as instructed in appendix B and numerals as instructed in appendix C.*

Examples of series (title proper, statements of responsibility, ISSN, numbering within series)

(Australian water resources council conference series ; 20)
(Chandos social media series ; 7)
(California government series II ; no. 15)
(Occasional papers ; new series, no. 3)
(NBER working paper series ; working paper 16617)
(Routledge media, culture and social change in Asia ; v. 19)
(Conference series / Institute of Physics ; no. 23)
(Advances in gender research, ISSN 1529-2126 ; v. 8)

3.8.6   Subseries and more than one series statement
(rules 1.6H and 1.6 J)

If a series is further organized into subseries, then the title of the subseries is copied after the title proper of the series after *full stop space*. The title of the subseries starts with a capital letter.

   e.g. The clinics. Surgery ; 40-5.

If an item belongs to two or more series, then the statement of each series should be transcribed according to the instructions 1.6B to 1.6G. Each separate series statement should be enclosed in parentheses.

   e.g. (Advances in gender research, ISSN 1529-2126 ; v. 8) (Emerald Social Sciences eBook Series Collection)

Table 3.6 **Partial book descriptions up to area 6**

Partially completed book description	Comments
Business communications [text] / Claudia Rawlins. - New York : HarperPerennial, 1993. - x, 209 p. ; 24 cm. - (HarperCollins college outline)	*Series title*
The media, cultural control and government in Singapore [text] / Terence Lee. - London : Routledge, 2010. - ix, 198 p. ; 24 cm. - (Routledge media, culture and social change in Asia ; 20)	*Series title and numbering within series*
Classic American short stories [text (large print)] : 17 stories from Hawthorne to Fitzgerald / edited by Clarence C. Strowbridge. - Mineola, N.Y. : Dover Publications, 2002. - 519 p. ; 24 cm. - (Dover large print classics)	*Series title*
Essentials of sociology [text] : a down-to-earth approach / James M. Henslin. - 3rd ed. - Boston ; London : Allyn and Bacon, 2000. - xxix, 475 p. : ill. (some col.), col. maps, ports. (some col.) ; 26 cm.	*No series-no elements added*
Fractures, dislocations and sprains [text] / Philip Wiles. - 2nd ed. / edited and revised by Rodney Sweetnam. - London : Churchill, 1969. - x, 133 p. : ill. ; 26 cm.	*No series-no elements added*

3.8.7 Examples of partial book descriptions: up to area 6

The descriptions in Table 3.6 are filled in with data about series. Only the first three items are part of a series, however.

3.9 Area 7: Note area

The data recorded in the note area of a bibliographic record can be taken from any suitable source, not necessarily the chief source of information. Notes may be preceded by *full stop space dash space* (. -) if written on the same line as the data of the previous areas, but even in cards they are usually written on new lines. The information in the notes area may refer to the previous edition of the item, the language, the type of material or possible accompanying materials, the intended audience, whether the item is a dissertation, restrictions on use etc.

In the latest update of AACR2, there are 23 instructions (1.7B1 to 1.7B23) on how to record data in the note area. The instructions for the note area in chapter 2 of AACR2 are similar to the rules of chapter 1. A selection of the most frequent elements is given below:

- **Statements of responsibility (1.7B6):** if the responsibility of a person or corporate body cannot be recorded to any of the previous areas, then a note like the following should be made:
  Attributed to Anna Clift Smith.
  Attributed to William Wright, solicitor.
  Authorship uncertain. Has been attributed to Maitreyanātha.

- **Edition and history (1.7B7):** typically cataloguers make a note about the previous edition of the item in hand. Likewise, a note is made if the item is a reprint of a work published in the past by a different publisher or it is an abridged or an expanded version of an earlier work. Some examples are:
    Previous ed.: 2001.
    First published as 30,000 years of art. This edition is abridged and revised.
    Reprint. Originally published: 100 Armenian tales and their folkloristic relevance, 1966.
    First edition entitled color Oxford dictionary, thesaurus, and wordpower guide, 2003.
    Previous editions edited by Margaret Drabble and Jenny Stringer.
    Originally published: The concise Oxford dictionary. 10th ed., rev. 2001.
- **Accompanying material and supplements (1.7B11):** a note about materials supplementary to the resource could be made as:
    Audio CD inside.
    Accompanied by CD-ROM entitled: Universidad de la República, 150o. aniversario de su instalación, 1849, 18 de julio, 1999.
    Accompanied by 'Notes from the editor' (22 p.) inserted.
    Includes 47 35 mm col. slides in plastic sheets in the binder.
- **Contents (1.7B18):** the cataloguer can also include the contents of the resource, either a part of them or in full, if it is considered necessary for describing some aspects of the item not implied by the rest of the description. Further, details about the existence of index and bibliography can be noted, e.g:
    Includes bibliographies.
    Includes index.
    Includes bibliographical references and index.
    Bibliography: p. 137.
    Tennis bibliography: p. 209-211.
    Includes bibliographies and indexes.

3.9.1 Examples of partial book descriptions: up to area 7

Notes are copied on new lines in the examples in Table 3.7. Usually notes are about the previous edition, the existence of bibliography and index and the possible accompanying material.

Table 3.7 Partial book descriptions up to area 7

Partially completed book descriptions	Comments
Business communications [text] / Claudia Rawlins. - New York : HarperPerennial, 1993. - x, 209 p. ; 24 cm. - (HarperCollins college outline) Includes bibliographical references and index.	*Notes in a new line*
The media, cultural control and government in Singapore [text] / Terence Lee. - London : Routledge, 2010. - ix, 198 p. ; 24 cm. - (Routledge media, culture and social change in Asia ; 20) Includes bibliographical references and index.	*Notes in a new line*

Table 3.7 Partial book descriptions up to area 7—Cont'd

Partially completed book descriptions	Comments
Classic American short stories [text (large print)] : 17 stories from Hawthorne to Fitzgerald / edited by Clarence C. Strowbridge. - Mineola, N.Y. : Dover Publications, 2002. - 519 p. ; 24 cm. - (Dover large print classics)	*No notes added*
Essentials of sociology [text] : a down-to-earth approach / James M. Henslin. - 3rd ed. - Boston ; London : Allyn and Bacon, 2000. - xxix, 475 p. : ill. (some col.), col. maps, ports. (some col.) ; 26 cm. Previous ed : 1998. One 4 3/4 in. computer optical disk in pocket attached to inside front cover. Includes bibliographical references and index.	*Notes about previous edition, the attachment of CD (optical disk), and references and indexes*
Fractures, dislocations and sprains [text] / Philip Wiles. - 2nd ed. / edited and revised by Rodney Sweetnam. - London : Churchill, 1969. - x, 133 p. : ill. ; 26 cm.	*No notes added*

3.10   Area 8: Standard number and terms of availability

The standard number is usually the ISBN, or the ISSN in continuing resources. The contents of this area are:

1.8A. Preliminary rule
1.8B. Standard number
1.8C. Key-title
1.8D. Terms of availability
1.8E. Qualification

In card catalogues, the standard number is usually copied on a new line, followed by terms of availability and type of binding or a characterization such as *limited ed.*, etc. The basic subareas are described below.

3.10.1   Standard number (rule 1.8B)

1.8B1. *Give the International Standard Book Number (ISBN), or International Standard Serial Number (ISSN), or any other internationally agreed standard number for the item being described. Give such numbers with the agreed abbreviation and with the standard spacing or hyphenation.*

The main rule advises cataloguers to give the standard number after the abbreviation, e.g. ISBN, with the standard spacing or hyphenation. More often than not, however, hyphens and spaces are left out and the numbers are written consecutively.

e.g. ISBN 3-16-148410-0
  ISBN 0117536121

3.10.2   Terms of availability (rule 1.8D, optional addition)

Some items have special terms of availability, e.g. they are free for educational pur-
poses or to the students of a specific institution. This is noted after the standard num-
ber. The price may also be written after the standard number.

> *e.g.* ISBN 978-90-808424-3-4 : £145.00
>   ISBN 0-646-18567-5 : $6.80
>   ISBN 0117536121 : No price
>   ISBN 0070246920 : Free copy to instructors
>   ISBN 0873260546 : Free to ICMA members

3.10.3   Qualification (rule 1.8E)

This subarea deals with the type of binding and the transcription of multiple standard
numbers. For example, if a book has different ISBNs in the UK and USA, then
the country is recorded after each number. The numbers are separated by *full stop
space dash* (. -).

> **1.8El.** *Give, after the standard number, a brief qualification when a resource bears
> two or more standard numbers. If a resource has only one standard number, add the
> type of binding if considered to be important.*

Surprisingly, the qualification is transcribed before the terms of availability. Sub-
areas 1.8E and 2.8E simply provide a few examples, like the following, to help cat-
aloguers deal with the transcription of the qualifications:

> ISBN 978-0-19-999576-9 (alk. paper)
> ISBN 0-691-07422-4 (acid-free paper)
> ISBN 0-06-052251-8 (cloth)
> ISBN 1-57230-078-7 (case bound)
> ISBN 1868405893 (CD-ROM)
> ISBN 978-0-415-87589-9 (hbk.) : £24.95
> ISBN 9780762442799 (US). - ISBN 9781849015813 (UK)

3.10.4   Fully completed descriptions: up to area 8

Table 3.8 shows second-level descriptions for our examples, which is the most usual
level of description applied in bibliographic records.

As was described in the previous chapter of this book, fewer elements are needed in
first-level descriptions. For example, only the extent of the item is transcribed in area 5
and data about the series are not copied at all. First-level descriptions of our examples
are provided in Table 3.9.

Table 3.8 **Fully completed second-level bibliographic descriptions**

Second-level description	Comments
Business communications [text] / Claudia Rawlins. - New York : HarperPerennial, 1993. - x, 209 p. ; 24 cm. - (HarperCollins college outline) Includes bibliographical references and index. ISBN 0064671550	*ISBN on a new line*
The media, cultural control and government in Singapore [text] / Terence Lee. - London : Routledge, 2010. - ix, 198 p. ; 24 cm. - (Routledge media, culture and social change in Asia ; 20) Includes bibliographical references and index. ISBN 9780415413305 (hbk.) : £75.00	*ISBN with type of binding and price*
Classic American short stories [text (large print)] : 17 stories from Hawthorne to Fitzgerald / edited by Clarence C. Strowbridge. - Mineola, N.Y. : Dover Publications, 2002. - 519 p. ; 24 cm. - (Dover large print classics). - ISBN 0486422518 (pbk) : £14.95	*ISBN with type of binding and price (on the same line)*
Essentials of sociology [text] : a down-to-earth approach / James M. Henslin. - 3rd ed. - Boston ; London : Allyn and Bacon, 2000. - xxix, 475 p. : ill. (some col.), col. maps, ports. (some col.) ; 26 cm. Previous ed : 1998. One 4 3/4 in. computer optical disk in pocket attached to inside front cover. Includes bibliographical references and index. ISBN 0205292992 (pbk.)	*ISBN with type of binding*
Fractures, dislocations and sprains [text] / Philip Wiles. - 2nd ed. / edited and revised by Rodney Sweetnam. - London : Churchill, 1969. - x, 133 p. : ill. ; 26 cm. - ISBN 0700014225	*ISBN on the same line*

Table 3.9 **Fully completed first-level bibliographic descriptions**

Business communications / Claudia Rawlins. - New York : HarperPerennial, 1993. - x, 209 p.
Includes bibliographical references and index.
ISBN 0064671550

The media, cultural control and government in Singapore / Terence Lee. - London : Routledge, 2010. - ix, 198 p.
Includes bibliographical references and index.
ISBN 9780415413305

Classic American short stories : 17 stories from Hawthorne to Fitzgerald / edited by Clarence C. Strowbridge. - Mineola, N.Y. : Dover Publications, 2002. - 519 p. - ISBN 0486422518

Essentials of sociology : a down-to-earth approach / James M. Henslin. - 3rd ed. - Boston ; London : Allyn and Bacon, 2000. - xxix, 475 p.
Previous ed: 1998.
One 4 3/4 in. computer optical disk in pocket attached to inside front cover.
Includes bibliographical references and index.
ISBN 0205292992

Fractures, dislocations and sprains / Philip Wiles. - 2nd ed. - London : Churchill, 1969. - x, 133 p. - ISBN 0700014225

3.11 More examples: developing step-by-step second-level descriptions

In this section we present more examples, providing the information roughly as it is depicted on the title page and the title page verso of selected books. Then the descriptions are progressively developed by referring to the above rules. This approach simulates the cataloguing process as realistically as possible.

3.11.1 Example 1: A book about history

Title page	Data on title page verso
J. A. S. GRENVILLE	HarperCollins*Publishers*, …
THE COLLINS	Hammersmith, London W6 8JB
HISTORY **OF THE** **WORLD**	HarperCollins*Publishers*, 1994 The first half of this work was published in an earlier form as
IN THE **TWENTIETH** **CENTURY**	*A World History of the Twentieth Century Volume I: Western Dominance, 1900–45* by Fontana Press in 1980
HarperCollins*Publishers*	ISBN 0 00 255169 1

- Area 1: Title and statement of responsibility
  Title proper is capitalized (rules 1.1B1 and 1.1B2) as:
      The Collins history of the world in the twentieth century

  The general material designation will not be copied in any of the examples in this section, following current practice in online catalogues.
  There is no parallel title or other title information, so next we add the statement of responsibility, as it appears on the title page (rule 1.1F1):
      The Collins history of the world in the twentieth century / J. A. S. Grenville

- Area 2: Edition
  Although on the title page verso it is stated that '*The first half of this work was published in an earlier form*', the item we are cataloguing is in fact a new work, published by a new publisher under a new title. Thus, it is not a second edition and we should not transcribe anything in this area. If it is considered necessary, a note can be added later in area 7.
- Area 3: Material- (or type of publication) specific details
  This area is not to be completed for books, as was discussed earlier in this chapter. In the next examples also this area is skipped.

- Area 4: Publication, distribution, etc.
  This information is contained on the title page verso. The book is published in London, UK. If cataloguing is performed in the UK, then only London needs to be transcribed. But since there are cities named London in at least the US and Canada, if the agency is located in either of these countries, then UK should be added in square brackets after London (i.e. *London, [UK]*). Based on rules 1.4C1, 1.4D1 and 1.4F1 the record becomes:

  The Collins history of the world in the twentieth century / J. A. S. Grenville. - London : HarperCollins, 1994

- Area 5: Physical description
  To decide on the extent of the item, we need to check the inside of the book. It uses roman numerals up to page xviii and numbering then restarts using Arabic numerals and runs from 1 to 973. There are also several black and white illustrations and a few maps. The height of the book is approximately 25.5 cm and therefore 26 will be transcribed. So, based on instructions 2.5B2 and 2.5B5 for the extent, 2.5C1 for illustrative matter and 2.5D1 for the dimensions, the record is filled in as:

  The Collins history of the world in the twentieth century / J. A. S. Grenville. - London : HarperCollins, 1994. - xviii, 973 p. : ill., maps ; 27 cm.

- Area 6: Series
  This book is not part of a series, so nothing is transcribed here.
- Area 7: Notes
  Pages 951 to 973 contain an index of important topics covered in the book. Also, a note on the previous publication, under a different title, by another publisher could be added. Relying on instructions 1.7B7 and 1.7B18, the record becomes:

  The Collins history of the world in the twentieth century / J. A. S. Grenville. - London : HarperCollins, 1994. - xviii, 973 p. : ill., maps ; 27 cm.

  Includes index.
  First half originally published in 1980: A world history of the twentieth century volume I: western dominance, 1900-45.

- Area 8: Standard number and terms of availability
  The copy in hand does not mention any special terms of availability. Nor does it include details about the price, so we simply need to transcribe the ISBN in some form, either with spaces or with dashes or as a non-spaced number. The final bibliographic record is (rule 1.8B1):

The Collins history of the world in the twentieth century / J. A. S. Grenville. - London : HarperCollins, 1994. - xviii, 973 p. : ill., maps ; 27 cm.
Includes index.
First half originally published in 1980: A world history of the twentieth century volume I: western dominance, 1900-45.
ISBN 0002551691

3.11.2   Example 2: A technical book

Title page	Data on title page verso
PETER van der LINDEN	© 2004 Sun Microsystems, Inc.
Just Java 2 SIXTH EDITION	Printed in the United States of America . . . Santa Clara, California 95054 U.S.A.
SUN MICROSYSTEMS PRESS A Prentice Hall Title	. . . ISBN 0-13-577370-9

- Area 1: Title and statement of responsibility
  Based on instructions 1.1B1 and 1.1 F1, the title proper and the statement of the responsibility are copied as:
    Just Java 2 / Peter van der Linden

- Area 2: Edition
  This is the sixth edition of the book, so the text *6th ed.* should be added after the first two elements (rule 1.2B1):
    Just Java 2 / Peter van der Linden. - 6th ed.

- Area 4: Publication, distribution, etc.
  As seen on the title page verso, the book is published in Santa Clara by Sun Microsystems Press and has a copyright date of 2004. To distinguish the place the abbreviated (appendix B) state name will be used after Santa Clara. Rule 1.4F6, which is not discussed above, advises the cataloguer to use *c* in front of a date if it concerns the copyright. The rest of the elements are transcribed as advised in rules 1.4C1, 1.4D1 and 1.4F1:
    Just Java 2 / Peter van der Linden. - 6th ed. - Santa Clara, Calif. : Sun Microsystems Press, c2004

- Area 5: Physical description
  Checking the book, we find a few figures and photographs, which will be recorded as illustrations. The first pages are numbered i–xxiii and the rest 1–816 and the size of the book is almost 24 x 18 cm. According to the rules 2.5B2, 2.5B5, 2.5C1 and 2.5D1 the record becomes:
    Just Java 2 / Peter van der Linden. - 6th ed. - Santa Clara, Calif. : Sun Microsystems Press, c2004. - xxiii, 816 p. : ill. ; 24 cm.

- Area 6: Series
  As in the previous example, this book is not part of a series, so nothing is transcribed.

- Area 7: Notes
  An index is included at the end of the book and thus the record becomes (rule 1.7B18):
  > Just Java 2 / Peter van der Linden. - 6th ed. - Santa Clara, Calif. : Sun Microsystems Press, c2004. - xxiii, 816 p. : ill. ; 24 cm.
  > Includes index.
- Area 8: Standard number and terms of availability
  No special terms of availability are stated in the book, so the final bibliographic record is (rule 1.8B1):

Just Java 2 / Peter van der Linden. - 6th ed. - Santa Clara, Calif. : Sun Microsystems Press, c2004. - xxiii, 816 p. : ill. ; 24 cm.
Includes index.
ISBN 0131482114

3.11.3   Example 3: Another technical book

Text below in italics must be coded in smaller font size.

Title page	Data on title page verso
Data Warehouse: Practical Advice from the Experts Joyce Bischoff *and Ted Alexander* *Sid Adelman, Denis Kosar, Peter Brooks,... Richard Yevich* *Foreword by John A. Zachman* An Alan R. Apt Book Prentice Hall Upper Saddle River, New Jersey 07458	© 1997 by Prentice-Hall, Inc. Upper Saddle River, New Jersey 07458 . . . ISBN 0-13-148211-4

- Area 1: Title and statement of responsibility
  If you observe the title page, there are several people who have some degree of responsibility about this book. Joyce Bischoff obviously has the main responsibility, as her name is printed in larger type on the cover and the title page of the book. There also 19 more contributors to this book, whose names are printed on the title page, and the book is prefaced by John A. Zachman. So how do we transcribe the statements of responsibility? First we must distinguish the roles: Joyce Bischoff to Richard Yevich bear authoring responsibility, while John A. Zachman is responsible for the foreword only. These two categories will be separated by a semicolon. Although Joyce Bischoff and Ted Alexander clearly have diverse degrees of responsibility, they are the people who are mainly responsible for the work. The other contributors can be

introduced after them by adding an explanatory word, like *[with]* to show that more people have contributed to the work. Of course we cannot copy more than three contributors in total. Thus, the record should be transcribed as (based on the instructions 1.1B1, 1.1E1, 1.1 F1, 1.1 F5):

> *Data warehouse : practical advice from the experts / Joyce Bischoff and Ted Alexander [with] Sid Adelman . . . [et al.] ; foreword by John A. Zachman*

- Area 2: Edition
  This is the first edition of the book, so nothing goes here.
- Area 4: Publication, distribution, etc.
  The book is published by Prentice Hall in Upper Saddle River, New Jersey, with a copyright date of 1997. State names should be abbreviated (rules 1.4C1, 1.4D1 and 1.4F1).

> *Data warehouse : practical advice from the experts / Joyce Bischoff and Ted Alexander [with] Sid Adelman . . . [et al.] ; foreword by John A. Zachman. - Upper Saddle River, N.J. : Prentice Hall, c1997*

- Area 5: Physical description
  The pages are numbered in roman from i to xix and then numbering restarts and runs from 1 to 428. The book contains diagrams and has a height of exactly 24 cm. Based on instructions 2.5B2, 2.5B5, 2.5C1 and 2.5D1 the record becomes:

> *Data warehouse : practical advice from the experts / Joyce Bischoff and Ted Alexander [with] Sid Adelman . . . [et al.] ; foreword by John A. Zachman. - Upper Saddle River, N.J. : Prentice Hall, c1997. - xix, 428 p. : ill. ; 24 cm.*

- Area 6: Series
  This item is not part of a series.
- Area 7: Notes
  The book includes an index. The 'An Alan R. Apt Book' indication on the title page is clearly something that adds to the authority of the book and therefore a note should be made (rule 1.7B18):

> *Data warehouse: practical advice from the experts / Joyce Bischoff and Ted Alexander [with] Sid Adelman . . . [et al.] ; foreword by John A. Zachman. - Upper Saddle River, N. J. : Prentice Hall, c1997. - xix, 428 p. : ill. ; 24 cm.*
>
> Includes index.
> "An Alan R. Apt book."

- Area 8: Standard number and terms of availability
  The standard number is transcribed at the end of the record (rule 1.8B1):

Data warehouse : practical advice from the experts / Joyce Bischoff and Ted Alexander [with] Sid Adelman . . . [et al.] ; foreword by John A. Zachman. - Upper Saddle River, N.J. : Prentice Hall, c1997. - xix, 428 p. : ill. ; 24 cm.
Includes index.
"An Alan R. Apt book."
ISBN 0135773709

3.11.4   Example 4: A book about literature

Title page	Data on title page verso
The Apocalyptic Imagination	First edition published 1984 by Crossroad
An Introduction to Jewish Apocalyptic Literature	Second edition published jointly 1998 by Wm. B. Eerdmans Publishing Co. 255 Jefferson Ave. S.E., Grand Rapids, Michigan 49503 /
SECOND EDITION John J. Collins	P.O. Box 163, Cambridge CB3 9PU U.K. and by
WILLIAM B. EERDMANS PUBLISHING COMPANY GRAND RAPIDS, MICHIGAN / CAMBRIDGE, U.K. DOVE BOOKSELLERS LIVONIA, MICHIGAN	Dove Booksellers 30633 Schoolcraft Road. Suite C, Livonia, Michigan 48150 *Book cover:* THE BIBLICAL RESOURCE SERIES

- Area 1: Title and statement of responsibility
  This book has a title and other title information which should be transcribed together, separated by *space colon space* (rules 1.1B1 and 1.1E1). The statement of responsibility is held by John J. Collins and is copied after the title proper and the other title information (rule 1.1 F1):

  The apocalyptic imagination : an introduction to Jewish apocalyptic literature / John J. Collins

- Area 2: Edition
  This is the second edition of the book and thus the text *2nd ed.* should be copied after *full stop space dash space* (rule 1.2B1):

  The apocalyptic imagination : an introduction to Jewish apocalyptic literature / John J. Collins. - 2nd ed.

- Area 4: Publication, distribution, etc.
  The second edition of the book was released in 1998 and, as seen on the title page and the title page verso, the book is jointly published by two publishers located in the USA and UK. Based on the instruction 1.4D1 both publishers could be transcribed, delimited by *space semicolon space.*

  The apocalyptic imagination : an introduction to Jewish apocalyptic literature / John J. Collins. - 2nd ed. - Grand Rapids, Mich. ; Cambridge, UK : William B. Eerdmans ; Livonia, Mich. : Dove booksellers, 1998

  Although rule 1.4D1 and the examples in AACR2 urge for transcribing both publishers, in reality only one publisher is transcribed and usually only the first location of the publisher. So the record could be transcribed as:

  The apocalyptic imagination: an introduction to Jewish apocalyptic literature / John J. Collins. - 2nd ed. - Grand Rapids, Mich. : William B. Eerdmans, 1998

- Area 5: Physical description
  The book contains xiii pages numbered in roman numerals and 337 pages numbered in Arabic numerals. The height of the book is approximately 24 cm. Using the shorter version of the record, where only the first publisher and the first location are transcribed, the record becomes:

  The apocalyptic imagination: an introduction to Jewish apocalyptic literature / John J. Collins. - 2nd ed. - Grand Rapids, Mich. : William B. Eerdmans, 1998. - xiii, 337 p. ; 24 cm.

- Area 6: Series
  This book belongs to the series entitled 'THE BIBLICAL RESOURCE SERIES'. This information appears on the cover of the book and on some internal pages preceding the title page. According to rule 1.6A2, if the information in this area is not taken from the chief source of information, then it should be enclosed in square brackets. However, checking most online OPACs, the reader will notice that this information is commonly not enclosed in square brackets. So, as a result of rule 1.6B1 the record is completed as:

  The apocalyptic imagination: an introduction to Jewish apocalyptic literature / John J. Collins. - 2nd ed. - Grand Rapids, Mich. : William B. Eerdmans, 1998. - xiii, 337 p. ; 24 cm. - (The biblical resource series)

- Area 7: Notes
  The book includes an index and we can additionally include a note about the previous edition. Crossroad is a publishing house in New York. This could also be included in the note.

  The apocalyptic imagination : an introduction to Jewish apocalyptic literature / John J. Collins. - 2nd ed. - Grand Rapids, Mich. : William B. Eerdmans, 1998. - xiii, 337 p. ; 24 cm. - (The biblical resource series)

  Includes bibliographical references and index.
  Previous ed.: New York: Crossroad, 1984.
- Area 8: Standard number and terms of availability

  No special terms of availability are indicated on the title page verso, so we simply transcribe the standard number at the end of the record (rule 1.8B1):

The apocalyptic imagination : an introduction to Jewish apocalyptic literature / John J. Collins. - 2nd ed. - Grand Rapids, Mich. : William B. Eerdmans, 1998. - xiii, 337 p. ; 24 cm. - (The biblical resource series)
Includes bibliographical references and index.
Previous ed.: New York: Crossroad, 1984.
ISBN 0802843719

3.11.5   Example 5: A book about social research methods

Title page	Data on title page verso
Readings in Social Research Methods	Readings in Social Research Methods, Third Edition
	Diane Kholos Wysocki

THIRD EDITION

DIANE KHOLOS WYSOCKI
University of Nebraska at Kearney

THOMSON
WADSWORTH

Australia • Brazil • Canada • Mexico
• Singapore • Spain
United Kingdom • United States

Thomson Higher Education
10 Davis Drive
Belmont, CA 94002-3098
USA

© 2008, 2004. Thomson Wadsworth, a part of The Thomson
Corporation.

Book cover:
The Wadsworth
Sociology Reader
Series

ISBN-10: 0-495-09337-8

- Area 1: Title and statement of responsibility
  Although not mentioned explicitly, Diane Kholos Wysocki is in reality the editor of the book. This becomes clear by checking the table of contents. The phrase *edited by* in square brackets can be added in front of the editor's name (instruction 1.1F8).
  Readings in social research methods / [edited by] Diane Kholos Wysocki

- Area 2: Edition
  This is the third edition of the book (rule 1.2B1):
  Readings in social research methods / [edited by] Diane Kholos Wysocki. - 3rd ed.

- Area 4: Publication, distribution, etc.
  The book is published by WADSWORTH, THOMSON which, based on existing records, is commonly transcribed as Wadsworth/Thomson or Thomson/Wadsworth. Further, if the cataloguing agency is in the UK, then the location, e.g. *London*, can be added as the place name of the publisher. Likewise, if the agency is in another country, the respective location could be copied as well.
  Readings in social research methods / [edited by] Diane Kholos Wysocki. - 3rd ed. - Belmont, CA : Wadsworth/Thomson, 2008
  or
  Readings in social research methods / [edited by] Diane Kholos Wysocki. - 3rd ed. - Belmont, CA ; London : Wadsworth/Thomson, 2008

- Area 5: Physical description
  The height of the book is approximately 24 cm and the text contains a number of images and diagrams. The first pages are numbered i–xiv and the rest of the book is numbered with Arabic numerals from 1 to 236.
  Readings in social research methods / [edited by] Diane Kholos Wysocki. - 3rd ed. - Belmont, CA : Wadsworth/Thomson, 2008. - xiv, 236 p. : ill. ; 24 cm.

- Area 6: Series
  The item belongs to the 'The Wadsworth Sociology Reader Series', as is written on the book's cover.

*Readings in social research methods / [edited by] Diane Kholos Wysocki. - 3rd ed. -
Belmont, CA : Wadsworth/Thomson, 2008. - xiv, 236 p. : ill. ; 24 cm. - (The Wadsworth
sociology reader series)*

- Area 7: Notes
  A note about the previous edition and a note about the existence of an index and bibliography
  can be included.

    *Readings in social research methods / [edited by] Diane Kholos Wysocki. - 3rd ed. -
    Belmont, CA : Wadsworth/Thomson, 2008. - xiv, 236 p. : ill. ; 24 cm. - (The Wadsworth
    sociology reader series)*

    Previous ed.: 2004.
    Includes bibliographical references and index.
- Area 8: Standard number and terms of availability
  Again, no special terms of availability are cited on the book, so we simply transcribe the
  ISBN at the end of the record:

    *Readings in social research methods / [edited by] Diane Kholos Wysocki. - 3rd ed. -
    Belmont, CA : Wadsworth/Thomson, 2008. - xiv, 236 p. : ill. ; 24 cm. - (The Wadsworth
    sociology reader series)*

    Previous ed.: 2004.
    Includes bibliographical references and index.
    ISBN 0495093378

3.12   Summary

This chapter has elaborated the basic instructions of chapter 1 of AACR2 and selected
rules of chapter 2 of AACR2. The chief aim has been to cover the common cases
which cataloguers encounter when dealing with books. Several examples for each rule
have been presented and complete descriptions with punctuation have been given at
the end of each area of description.

Further, in the last section, we have provided illustrations of the title page and the
title page verso of selected books and the respective records were gradually built by
applying the appropriate rule(s) in each area of description.

The examples presented in this chapter are formatted as they would appear in a card
catalogue. As we discussed in Chapter 1 of the book, modern catalogues are comput-
erized and their data are encoded in MARC. The MARC encoding scheme is presented
in Chapter 11. The encoding of AACR2 data in MARC is also discussed in the same
chapter.

Based on the examples and the explanations above, it can be argued that catalogu-
ing is not such a complex process as it may at first seem. Most of the rules cover rare
cases, and so cataloguers need ordinarily to have a good understanding of the com-
mon instructions. Experience also plays an important role. As an individual becomes
more proficient in developing or managing records, the process becomes less ardu-
ous. Copy and cooperative cataloguing support the process and make it less
challenging.

3.13 Practical exercises

1 Develop a second-level bibliographic description for the book:

Title page	Data on title page verso
Contemporary Perspectives in E-learning Research	First published 2007 by Routledge
Themes, methods and impact on practice	
Edited by Gráinne Conole	ISBN10: 0-415-39393-0 (hbk)
and Martin Oliver	ISBN10: 0-415-39394-9 (pbk)
Routledge Taylor & Francis Group	ISBN10: 0-203-96626-0 (ebk)
LONDON AND NEW YORK	

The book is part of the 'Open and Flexible Learning Series', the pages are numbered i–xvii and 1–263, its height is approximately 24 cm and it contains an index and bibliographic references. The cataloguing agency is located in the USA.

2 Develop a second-level bibliographic description for the book:

Title page	Data on title page verso
DOING	
INTERNET RESEARCH	Copyright © 1999
Critical Issues and Methods for	SAGE Publications
Examining the Net	. . .
STEVE JONES	Thousand Oaks, California
Editor	London, UK
	New Delhi, India
SAGE Publications	ISBN 0-7619-1594-X (cloth : acid-free paper)
Thousand Oaks London New Delhi	ISBN 0-7619-1595-8 (pbk. : acid-free paper)

The pages of the book are numbered i–xxiv and 1–299, its height is approximately 24 cm and it contains illustrations, index and bibliographic references. The cataloguing agency is in the UK.

3 Develop a second-level bibliographic description for the book:

Title page	Data on title page verso
sitepoint	
THE PHP ANTHOLOGY	Copyright © 2007
101 ESSENTIAL TIPS, TRICKS & HACKS	
	Published by SitePoint Pty. Ltd.
BY DAVEY SHAFIK, MATTHEW WEIER	424 Smith Street Collingwood
O'PHINNEY, LIGAYA TURMELLE, HARRY	VIC Australia 3066
FUECKS, BEN BALBO	
	ISBN 978-0-9758419-9-0
2ND EDITION	

Pages are numbered i–xxiii and 1–520, the book's height is approximately 23 cm and it contains illustrations and index. 'VIC' is the abbreviation for 'Victoria'.

4 Develop a second-level bibliographic description for the book:

Title page	Data on title page verso
THE BIG CATS AND THEIR FOSSIL RELATIVES An Illustrated Guide to Their Evolution and Natural History Illustrations by MAURICIO ANTON Text by ALAN TURNER COLUMBIA UNIVERSITY PRESS New York	New York Chichester, West Sussex Copyright © 1997 Columbia University Press Includes bibliographical references (p. 221) and index. ISBN 978-0-231-10228-5 (cloth) ISBN 978-0-231-10229-2 (pbk.)

Pages are numbered i–xviii and 1–229 but it also contains six unnumbered pages (i.e. the index) at the end of the book. The book's height is approximately 26 cm and it contains illustrations, some of which are colored.

5 Develop a second-level bibliographic description for the book:

Title page	Data on title page verso
Religious Regimes and State-Formation Perspectives from European Ethnology Edited by Eric R. Wolf STATE UNIVERSITY OF NEW YORK PRESS	© 1991 State University of New York Press, Albany Edited by Eric R. Wolf [Adrianus Koster and Daniel Meijers, general editors] Includes bibliographical references and index. ISBN 0-7914-0650-4 ISBN 0-7914-0651-2 (pbk.)

Roman numbering ends at ix and the book contains 298 pages numbered in Arabic numerals, and also six unnumbered pages (i.e. the index) at the end of the book. The book's height is approximately 26 cm and it contains illustrations, some of which are coloured.

6 Develop a second-level bibliographic description for the book:

Title page	Data on title page verso
Obstetrics and Gynaecology AN ILLUSTRATED COLOUR TEXT Joan Pitkin, Alison B. Peattie, Brian A. Magowan Illustrated by Ian Ramsden	CHURCHILL LIVINGSTONE © 2003

CHURCHILL LIVINGSTONE

ISBN 044305035X

EDINBURGH LONDON NEW YORK ...
SYDNEY TORONTO 2003

The pages of the book are numbered i–vii and 1–166. The height of the book is approximately 30 cm, it contains illustrations which are mainly coloured and has an index. Assume that the cataloguing agency is in Canada.

7 Develop a second-level bibliographic description for the book:

Title page	Data on title page verso
Structured Products and Related Credit Derivatives	
A Comprehensive Guide for Investors	Copyright © 2008 by John Wiley & Sons, Inc.
	Published by John Wiley & Sons, Inc.,
BRIAN P. LANCASTER	Hoboken, New Jersey.
GLENN M. SCHULTZ	
FRANK J. FABOZZI	ISBN: 978-0-470-12985-2
John Wiley & Sons, Inc.	

The book is part of 'The Frank J. Fabozzi Series' and has xix roman-numbered pages and 523 Arabic-numbered pages. Its height is 24 cm, it contains illustrations and includes an index.

8 Develop a first- and a second-level bibliographic description for the book:

Title page	Data on title page verso
Moralizing International Relations	Copyright © Ariel Colonomos, 2008
Called to Account	PALGRAVE MACMILLAN
	175 Fifth Avenue, New York, N.Y. 10010 and
Ariel Colonomos	Houndmills, Basingstoke, Hampshire, England
Translated by Chris Turner	RG21 6XS
Palgrave	ISBN-10: 0-230-60039-5
Macmillan	Includes bibliographical references and index.

The book is part of 'The Sciences Po Series in International Relations and Political Economy' series. Pages are numbered i–xv and 1–261 and the height of the book is approximately 22 cm. Illustrations are included in the text and the cataloguing agency is located in the USA.

9 Develop a first- and a second-level bibliographic description for the book:

Title page	Data on title page verso
INFORMATION TECHNOLOGY FOR COUNTERTERRORISM	
IMMEDIATE ACTIONS AND FUTURE POSSIBILITIES	

Committee on the Role of Information
Technology in Responding to Terrorism
Computer Science and
Telecommunications Board
NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES

John L. Hennessy, David A. Patterson,
and Herbert S. Lin, Editors

THE NATIONAL ACADEMIES PRESS
Washington, D.C.

THE NATIONAL ACADEMIES PRESS •
500 Fifth Street, N.W. • Washington, DC 20001

International Standard Book Number
0-309-08736-8

Copyright 2003

Pages are numbered i–xv and 1–128, the height of the book is approximately 23 cm and it contains bibliographic references.

10 Develop a first- and a second-level bibliographic description for the book:

Title page	Data on title page verso
Quantum Gravity Second Edition CLAUS KIEFER Institute for Theoretical Physics University of Cologne OXFORD UNIVERSITY PRESS	Oxford University Press Great Clarendon Street, Oxford OX2 6DP First published 2007 ISBN 978-0-19-921252-1 (Hbk)

This book is number 136 in the 'INTERNATIONAL SERIES OF MONOGRAPHS ON PHYSICS' series. It has xi pages numbered in roman numerals and 361 numbered in Arabic notation and it contains bibliographic references and an index. The height of the book is 24 cm and it contains several figures.

11 Develop a first- and a second-level bibliographic description for the book:

Title page	Data on title page verso
LEARNING TO TEACH ENGLISH IN THE SECONDARY SCHOOL A companion to school experience 3rd Edition Edited by Jon Davison and Jane Dowson Routledge LONDON AND NEW YORK	First published 2009 by Routledge 2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN ISBN10: 0-415-49165-7 (hbk) ISBN10: 0-415-49166-5 (pbk) ISBN10: 0-203-87114-6 (ebk)

This book belongs to the 'LEARNING TO TEACH SUBJECTS IN THE SECONDARY SCHOOL SERIES'. Its pages are numbered i–xx in roman numerals and 1–348 in Arabic notation and it contains bibliographic references and an index. The height of the book is approximately 25 cm and the previous edition was published on 2003.

12 Develop a first- and a second-level bibliographic description for the book:

Title page	Data on title page verso
Text, Cases & Materials on PUBLIC LAW & HUMAN RIGHTS Second Edition	Second edition first published in Great Britain 2003 by
Helen Fenwick, Professor in Law, University of Durham	Cavendish Publishing Limited, The Glass House
Gavin Phillipson, Lecturer in Law, University of Durham	Wharton Street, London WC1X 9PX, United Kingdom
Cavendish Publishing Limited London · Sydney · Portland, Oregon	ISBN 1-85941-655-1

The pages of the book are numbered i–lxiv and 1–1078. Its height is approximately 24 cm and it contains an index.

3.14 Reference

AACR2. (2005). *Anglo-American cataloguing rules: 2002 revision/2005 update*. Chicago, IL: American Library Association.

3.15 Webliography

1. Visit the following online catalogues to check how the book *Genetic Modification in the Food Industry* is catalogued in the Library of Congress, http://lccn.loc.gov/97075258, and in the British Library, http://primocat.bl.uk/F?func=direct&local_base=ITEMV&doc_number=007078565&con_lng=prm.

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AACR2 access points and headings 4

4.1 Introduction

Access points, known also as *entry points*, are the different pieces of information, such as author, title or subject, used for locating specific bibliographic records. For each item, different entry points can be defined, one of which, according to AACR2, has to be identified as the *main entry* and the others as *added entries*. In card catalogues, the words or phrases used for accessing the catalogue were written on the top (*head*) of the cards and they were customarily called *headings*. The difference between main and added entries is maintained in electronic catalogues as well. In the following sections we briefly examine the main issues and rules associated with the choice and form of headings.

Chapters 21 to 24 of AACR2 deal with the determination and establishment of access points (headings):

- Chapter 21 – Choice of access points
- Chapter 22 – Form of headings for persons
- Chapter 23 – Form of headings for geographic names
- Chapter 24 – Form of headings for corporate bodies

That is, the rules for determining the main and added entry headings are established in chapter 21, and chapters 22 to 24 are concerned with the form and the amendments necessary to the personal, geographic and corporate body names. A few more issues, such as uniform titles (chapter 25 of AACR2), references (chapter 26) and authority control, are reviewed briefly towards the end of this chapter.

The analysis in this chapter does not aspire to be a comprehensive presentation of all the possible instances of dealing with headings. It merely provides general directions for how AACR2 deals with these issues, in order to facilitate your understanding of the techniques for differentiating the names in cases of ambiguity. The reader should consult the AACR2 text directly for specialized cases.

4.2 Choice of access points

Chapter 21 of AACR2 deals with the choice of access points, but not with their form, which is covered in the subsequent chapters (rule **21.0C1**). The introductory rule **21.0A1** states:

> *The rules in this chapter are rules for determining the choice of access points (headings) under which a bibliographic description is entered in a catalogue. The rules give instructions on the choice of one of these access points as the main entry heading, the others being added entry headings.*

The sources for determining the access points (rule **21.0B1**) are the chief source of information, other parts of the item, e.g. the text of the book, and even external content if the previous sources of information are ambiguous or insufficient.

The main entry is made under either:

- Personal author or
- Corporate body or
- Title

The following sections are organized according to the selection of the main entry. Selected rules are presented in each category.

4.2.1   Works of single or shared responsibility

4.2.1.1   Main entry under personal author: works of personal authorship

A personal author is the person chiefly responsible for the creation of the intellectual or artistic content of a work (rule **21.1A1**). There are different instances in AACR2 of when a person is identified as a personal author. The name is then used as a main heading. The most common cases are discussed below.

21.4. Works for which a single person or a corporate body is responsible
21.4A. *Works of single personal authorship*

> **21.4A1.** *Enter a work, a collection of works, or selections from a work or works by one personal author (or any reprint, reissue, etc., of such a work) under the heading for that person whether named in the item being catalogued or not.*

This rule states that in a work with a single author, the author's name should be used as the main entry. In this case an added entry is made for at least the title. Further added entries could be made, e.g. for the series. We will consider added entries in more detail later in this section.

Example: Single-authored books

The Galleon history of Corregidor / by Alfonso J. Aluit
Main entry: under the heading for Alfonso J. Aluit
Added entry: title

21.6 Works of shared responsibility

The instructions in this category concern cases where several persons or corporate bodies share the responsibility for a work and perform the same function (e.g. all of the involved persons are authors or editors). By shared responsibility, AACR2 refers mainly to works where two or more persons or two or more corporate bodies have

responsibility. Works for which different persons have prepared separate contributions or works resulting from a collaboration or an exchange between a person and a corporate body are also works of shared responsibility. Here we focus on shared responsibility resulting from collaboration between persons; we will examine corporate bodies later.

21.6B. *Principal responsibility indicated*

> **21.6B1.** *If, in a work of shared responsibility, principal responsibility is attributed (by the wording or the layout of the chief source of information of the item being catalogued) to one person or corporate body, enter under the heading for that person or body.... Make added entries under the headings for other persons or bodies involved if there are not more than two.*

Essentially, this means that if the main author, for example, is indicated by the layout (e.g. larger fonts), then this author's name should be the main entry. The other names, if there are up to two authors, should be made added entries.

Example: Principal responsibility indicated

500 home run club / Bob Allen, with Bill Gilbert
Main entry: under the heading for Bob Allen
Added entry: under the heading for Bill Gilbert

21.6C. *Principal responsibility not indicated*

If there are up to three persons who are considered equally responsible for the work, then the main entry is under the first named person. Added entries are made for the two others. In works where responsibility is shared among more than three persons the main entry is made under the title, as we will examine later in the relevant section.

> **21.6C1.** *If responsibility is shared between* two or three *persons or bodies and principal responsibility is not attributed to any of them by wording or layout, enter under the heading for the one named first. Make added entries under the headings for the others.*

Examples: Principal responsibility not indicated (up to three persons)

Sociology / Christopher Townroe, George Yates
Main entry: under the heading for Christopher Townroe
Added entries: title, George Yates

Teaching English using ICT : a practical guide for secondary school teachers / Tom Rank, Chris Warren and Trevor Millum
Main entry: under the heading for Tom Rank
Added entries: under the headings for Chris Warren, Trevor Millum

---

4.2.1.2   Main entry under corporate body

21.1B. Entry under corporate body

> ***21.1B1. Definition.*** *A corporate body is an organization or a group of persons that is identified by a particular name and that acts, or may act, as an entity. . . . Typical examples of corporate bodies are associations, institutions, business firms, nonprofit enterprises, governments, government agencies, projects and programmes, religious bodies, local church groups identified by the name of the church, and conferences. . . .*

This definition provides an account of what is regarded as a corporate body. When one or more corporate bodies are responsible for a work, then some of the rules for deciding the main entry in the case of personal authors are also applicable here (see rules 21.6B1 and 21.6C1 above).

21.4B. Works emanating from a single corporate body

> ***21.4B1.*** *Enter a work, a collection of works, or selections from a work or works emanating from one corporate body (or any reprint, reissue, etc., of such a work) under the heading for the body if the work or collection falls into one or more of the categories given in 21.1B2 (*i.e. provides specific cases for what is considered an appropriate corporate body).*

Example: Works emanating from a single corporate body

Dictionary catalog of the music collection / the New York Public Library, the Research Libraries.
Main entry: under the heading for New York Public Library, the Research Libraries
Added entry: title

21.6. Works of shared responsibility

The aforementioned rules 21.6B1 and 21.6C1 apply also when up to three corporate bodies share responsibility for a work. The main entry is under the heading for the principally responsible or first named corporate body. Added entries are made for the other corporate bodies and the title.

Example: Works of shared responsibility among corporate bodies

Developing an information strategy for the Open University / Joint Information Systems Committee.
Main entry: under the heading for Joint Information Systems Committee
Added entry: title

4.2.1.3 Main entry under title

21.6. Works of shared responsibility
21.6C. *Principal responsibility not indicated*

> **21.6C2.** *If responsibility is shared among* more than three *persons or corporate bodies and principal responsibility is not attributed to any one, two, or three, enter under title. Make an added entry under the heading for the first person or corporate body named prominently in the item being catalogued. If editors are named prominently, make an added entry under the heading for each if there are not more than three. If there are more than three named prominently, make an added entry under the heading for the principal editor and/or for the one named first.*

If more than three persons are responsible for a work, then the main entry is made under the heading for the title and an added entry is made for the first named person.

Example: Principal responsibility is not indicated (more than three persons)

Understanding sport : a socio-cultural analysis / John Horne . . . [et al.]
(Three additional authors named on title page)
Main entry: under title
Added entry: under the heading for John Horne

21.7. Collections of works by different persons or bodies

The instructions under 21.7 concern collections of independent works, collections consisting of extracts from independent works, and works consisting partly of independent works and partly of contributions by different persons or bodies. Stated more simply, edited works, compilations and commented works should be treated according to these specific instructions.

21.7B. *With collective title*

> **21.7B1.** *Enter a work falling into one of the categories given in 21.7A (*i.e. introductory rule*) under its title if it has a collective title. Make added entries under the headings for the compilers/editors if there are not more than three and if they are named prominently in the item being catalogued. If there are more than three compilers/editors named prominently, make an added entry under the heading for the principal compiler/editor and/or for the one named first.*

If a work is edited/compiled, then the main entry should be made under the title and added entries should be made for all the editors/compilers, if there are up to three persons. If more than three persons are involved, then an added entry is made for the principal compiler/editor or for the one named first.

Example: Edited works

Gypsy politics and traveller identity / edited by Thomas Acton
   Main entry: under title
   Added entry: under the heading for Thomas Acton

Handbook of research on e-learning standards and interoperability : frameworks and issues /
[edited by] Fotis Lazarinis, Steve Green, Elaine Pearson
   Main entry: under title
   Added entries: under the headings for Fotis Lazarinis, Steve Green, Elaine Pearson

Management of complex cardiovascular problems : the evidence-based medicine approach [text] /
edited by Thach N. Nguyen . . . [et al.]
   (Three additional editors are named on title page)
   Main entry: under title
   Added entry: under the heading for Thach N. Nguyen

4.2.2   *Works of mixed responsibility*

> **21.8A1.** *A work of mixed responsibility is one to which different persons or bodies make intellectual or artistic contributions by performing different kinds of activity (e.g., writing, adapting, illustrating, editing, arranging, translating).*

  Works authored by one or more individuals and that are, for instance, illustrated or commented on or adapted or translated by different persons fall under this category. These works are divided in AACR2 into the following types:

- previously existing works that have been modified, or
- new works to which different persons or bodies have made different kinds of contributions.

The identification of the main heading in these cases is controlled by a significant number of instructions (i.e. rules 21.9 to 21.27). Readers are advised to consult the AACR2 manual directly to determine the correct case. To provide some insight into the relevant issues we focus on new works and a typical case of collaboration between an artist and a writer (rule 21.24).

> **21.24A.** *Enter a work that is, or appears to be, a work of collaboration between an artist and a writer under the heading for the one who is named first in the chief source of information of the item being catalogued unless the other's name is given greater prominence by the wording or the layout. Make an added entry under the heading for the other one.*

Example: Collaboration between artist and writer

Little Quack's opposites / by Lauren Thompson ; illustrated by Derek Anderson
   Main entry: under the heading for Lauren Thompson
   Added entry: under the heading for Derek Anderson

Working out together : a complete fitness program for partners / by Carol Gregor ; photographs by Pauline Augustine
Main entry: under the heading for Carol Gregor
Added entry: under the heading for Pauline Augustine

Burning heart : a portrait of the Philippines / photographs by Marissa Roth ; text by Jessica Hagedorn
Main entry: under the heading for Marissa Roth
Added entry: under the heading for Jessica Hagedorn

4.2.3   Related works

Another category which is handled separately in AACR2 is *related works*. As seen below, the instructions in this category relate to supplements, indexes, etc. which are connected to other works.

> **21.28A1.** *Apply this rule to a separately catalogued work that has a relationship to another work. Such works include:*
>   *continuations and sequels, supplements, indexes, etc.*

According to the general rule 21.28B1, the cataloguer should apply one of the rules described in the previous sections to decide the main entry for the current work and to make an added entry for the related work, again based on the previously described rules. That is to say, the works are treated as different works, and the main entry is based on the supplement, index etc., and the added entry on the related work. The benefit of associating two works is to help catalogue users to find the related work more easily.

> **21.28B1.** *Enter a related work under its own heading (personal author, corporate body, or title) according to the appropriate rule in this chapter. Make an added entry (name-title or title, as appropriate) for the work to which it is related.*

In the following example, the author of the supplement (i.e. *A Teacher's Supplement to Discovering Idaho*) and the related work (i.e. *Discovering Idaho*) is the same person. That is why author's name is both a main and an added entry. The main entry is under the person or body responsible for the supplement and the added entry is under the author responsible for and the title of the related work.

Example: Related works

A teacher's supplement to Discovering Idaho / by Dwight William Jensen
Main entry: under the heading for Dwight William Jensen
Added entries (name-title): under the heading for Dwight William Jensen, title

4.2.4   Added entries

Added entries are needed to provide access to bibliographic descriptions in addition to the access provided by the main entry heading (rule **21.29A**). In the abovementioned rules and examples we referred also to the selection of added entries. AACR2 provides concrete instructions for the selection of added entries, which are numbered from **21.30A** to **21.30 M1**. The following list cites the most usual cases for an added entry.

- If two or three persons or bodies are responsible for a work, added entries should be made under the headings for the second and third individuals or bodies.
- If more than three persons or bodies are responsible for a work, then an added entry for the first named person or body should be made.
- An added entry under the title proper of every item entered under a personal heading should also be made.
- Added entries under the heading for a translator should at least be made if the work has been translated into the same language more than once or if it is implied in the chief source of information that the translator is the author. Further occasions for added entries for the translator are applicable.
- An added entry under the heading for an illustrator is made if the illustrator's name is given equal prominence to that of the person or corporate body named in the main entry heading or the illustrations occupy half or more of the item or the illustrations are considered to be an important feature of the work.
- An added entry under the heading for a series for each separately catalogued work in the series should be made if it provides a useful collocation.

The instructions in the respective sections of AACR2 provide details of how to handle further cases.

To sum up, chapter 21 expounds the ways to decide the main and added entries in a variety of cases, from single-authored books to adaptations of works for children to collections of works and multipart items.

4.3   Form of headings for persons, geographic names and corporate bodies

Chapters 22 to 24 of AACR2 are about the form of the main or added entry headings for, respectively, persons, geographic names and corporate bodies. The rules assist in creating consistent headings so that through them users can locate the desired information.

4.3.1   Headings for persons

Headings for persons are commonly in the form *Surname, Forename(s)*, followed sometimes by the birth date or other data, e.g.:

Strachan, Margaret Pitcairn
Thompson, Francis, 1859-1907
McLean, Jim, 1950-
McLean, Jim (James S.), 1940-

The reader may wonder why specific rules are needed for deciding the form of personal names. An obvious reason, arising from the last two examples, is that many persons have identical names. So, we are required to devise mechanisms by which to distinguish these individuals. More complexities arise from the following facts.

- Authors write under different names (pseudonyms, nicknames, pen names, etc.). For instance, Agatha Christie wrote some romances under the name Mary Westmacott; Lucy Beatrice Malleson used the pen name Anthony Gilbert; and Isaac Asimov wrote some science-fiction novels as Paul French.
- Authors use initials for forenames or omit some of their forenames, e.g. A. A. Milne (Alan Alexander Milne) or Bernard Shaw (George Bernard Shaw).
- Individuals with distinguished achievements earn a title of nobility (e.g. Sir or Duke) and other persons are elected to a prominent government post (e.g. President or Governor). As a result, different name variants appear in their works, e.g. both Arthur Conan Doyle and Sir Arthur Conan Doyle appear in various editions of the Sherlock Holmes crime fiction books.

In addition, compound or hyphenated surnames, e.g. Mary Flannery O'Connor, need special handling; married women may use either two surnames or their husband's last name; and incompatible spellings in various languages exist for names encoded in the Latin alphabet, e.g. Eco Umberto, Eko Umberto, Eco Humberto, or Eko Oumperto.

Having highlighted some of the cases where individuals publish their works under different names or different forms of the same name, we move on to discuss a selection of instructions in chapter 22 of AACR2. It is critical to understand that we are obliged to handle these cases for two main reasons: to distinguish different individuals who share the same name and to aggregate all the works of the same individual, who uses various names, under one heading.

4.3.1.1 Choice of name

The following general instructions advise cataloguers to use the name by which someone is commonly known, and in order to determine this name, the cataloguer has to look at the chief sources of information of works by that person.

> The pen name *Anthony Gilbert*, and not the real name *Lucy Beatrice Malleson*, is used for the writer of crime novels.
> *John Julius Norwich* wrote under this name, and not under his title *2nd Viscount Norwich*.

> ***22.1A.*** *In general, choose, as the basis of the heading for a person, the name by which he or she is commonly known. This may be the person's real name, pseudonym, title of nobility, nickname, initials, or other appellation. Treat a roman numeral associated with a given name (as, for example, in the case of some popes, royalty, and ecclesiastics) as part of the name.*
> ***22.1B.*** *Determine the name by which a person is commonly known from the chief sources of information (see 1.0A) of works by that person issued in his or her language. If the person works in a nonverbal context (e.g., a painter, a sculptor) or is not known primarily as an author, determine the name by which he or she is commonly known from reference sources issued in his or her language or country of residence or activity.*

Hyphens should be retained if they are used by the bearer of the name (rule **22.1D2**), e.g. *Peggy Fairbairn-Dunlop*, whereas hyphens joining one of a person's forenames to the surname should be omitted.

Rules **22.2** and **22.3** provide more concrete recommendations about the choice of the predominant name (e.g. pseudonym over real name) and the choice among different forms of the same name. Instructions **22.4** and **22.5** establish the form of the entry. Names are entered under the surname. These rules provide guidelines, among other issues, on how to handle compound and hyphenated surnames or surnames with separate prefixes in various languages, e.g. in Dutch *Menno ter Braak* is entered as *Braak, Menno ter*.

4.3.1.2   Additions to distinguish identical names

A few illustrative examples of adding data at the end of names, such as the birth date, to distinguish identical names, are analysed in this section.

22.17   Dates

The first potential addition is the birth date. For individuals who have passed away, the death date is added as well. The dates can be added for any person, even if there is no need to distinguish between headings.

> ***22.17A.*** *Add a person's dates (birth, death, etc.) in the form given below as the last element of a heading if the heading is otherwise identical to another.*
>
> *Give dates in terms of the Christian era. Add B. C. when appropriate. Give dates from 1582 on in terms of the Gregorian calendar.*
>
> *Optionally, add date(s) to any personal name, even if there is no need to distinguish between headings.*

For living persons the year or the full birth date is added if there is a need to distinguish between people with the same name and possibly the same birth year. Approximate dates are used when some of the dates are not known. A few examples extracted from the AACR2 text are:

Smith, John, 1924-	*living person*
Smith, John, 1837-1896	*both years known*
Smith, John, 1900 Jan. 10-	*same name, same birth year*
Smith, John, 1900 Mar. 2-	*so full birth date is used*
Smith, John, 1837?-1896	*probable birth date*
Smith, John, ca. 1837-1896	*approximate year of birth*
Smith, John, 1837-ca. 1896	*approximate year of death*
Smith, John, ca. 1837-ca. 1896	*both years approximate*
Smith, John, b. 1825	*year of death unknown*
Smith, John, d. 1859	*year of birth unknown*

22.18. Fuller forms

Another possible addition is a fuller form of a person's name in parentheses, to distinguish two persons with identical names. Commonly, this problem emerges when initials are used for the forenames. For instance, *Johnson, A. H.* may refer to *Johnson, Allison Heartz* or to *Johnson, Arthus Henry*.

> ***22.18A.*** *If a fuller form of a person's name is known and if the heading as prescribed by the preceding rules does not include all of that fuller form, add the fuller form to distinguish between headings that are otherwise identical. Add all the fuller form of the inverted part of the heading and/or the fuller form of the entry element, as appropriate. Enclose the addition in parentheses.*
>
> ...
>
> Optionally*, make the additions specified above even if they are not needed to distinguish between headings. However, when following this option, do not add:*
> *unused forenames to headings that contain forenames*
> *initials of names that are not part of the heading*
> *unused parts of surnames to headings that contain surnames.*

Some examples from the AACR2 text are:

Smith, Russell E. (Russell Edgar)
Smith, Russell E. (Russell Eugene)
Johnson, A. H. (Allison Heartz)
Johnson, A. H. (Arthus Henry)

Chapter 22 includes more rules for handling additions to names in certain languages, e.g. Arabic, Chinese etc. Our objective in this section has been to help the reader understand the need for handling the form of headings for persons consistently and to become aware of the main techniques proposed in AACR2.

4.3.2   Headings for geographic names

Chapter 23 contains the rules for establishing standard geographic names that may be used in main and added entry headings. The name of a place may change, or some names may be spelled differently in various languages. Therefore we need to establish the conditions necessary for consistent management of these names.

Rule **23.2A1** instructs cataloguers to use the English form of the name of a place if there is one in general use, e.g. *Florence* should be used instead of *Firenze* and *Sweden* over *Sverige*. Instruction **23.2B1** proposes the use of the vernacular form of a place name in the official language of the country if there is no English form in general use, e.g. *Buenos Aires*. If the country has more than one official language, use the form most commonly found in English-language sources, e.g. *Louvain* and not *Leuven*.

All additions to place names used as entry elements should be included in parentheses (rule **23.4A1**), e.g. *Budapest (Hungary)*. According to rule **23.4C1** no addition should be made to the name of a state, province, territory etc. of Australia, Canada, Malaysia, the United States, the USSR or Yugoslavia. However, for places that are in a

state, province, territory etc. of one of the countries listed above, add the name of the state etc. in which it is located (rule **23.4C2**), e.g. *Alexandria (Va.)*, *Kiev (Ukraine)*.

There is special consideration for places in the British Isles:

> **23.4D1.** *Do not make any addition to the names of the following parts of the British Isles: England, the Republic of Ireland, Northern Ireland, Scotland, Wales, the Isle of Man, the Channel Islands.*
>
> **23.4D1.** *If a place is located in England, the Republic of Ireland, Northern Ireland, Scotland, Wales, the Isle of Man, or the Channel Islands, add* England, Ireland, Northern Ireland, Scotland, Wales, Isle of Man, *or* Channel Islands, *as appropriate*.

Some examples included in the AACR2 text are:

Dorset (England)	Waterville (Ireland)
Bangor (Northern Ireland)	Strathclyde (Scotland)
Powys (Wales)	Bangor (Wales)
Ramsey (Isle of Man)	Jersey (Channel Islands)

For those cases not covered in the previous instructions, the name of the country in which the place is located should be added (rule **23.4E1**), e.g. *Lucca (Italy)*, *Madras (India)*.

A few more instructions provide for instances where an addition is necessary in order to distinguish between otherwise identical place names or to identify places (as in the case of a community within a city).

4.3.3 Headings for corporate bodies

Headings for corporate bodies are regulated in chapter 24 of AACR2. There are special instructions for how to manage additions to the names of a corporate body, subordinate and related bodies, government bodies and officials and religious bodies and officials.

As in personal name headings, corporate bodies should be entered under the names by which they are commonly known.

> **24.1A.** *Enter a corporate body directly under the name by which it is commonly identified, except when the rules that follow provide for entering it under the name of a higher or related body (see 24.13) or under the name of a government (see 24.18).*

The rule continues by stating that spaces should be omitted between initials in the name of the body. Full stops have to be used according to the predominant usage of the body's name, e.g. *W.H. Smith*.

4.3.3.1   Changes of name (rule 24.1C)

> **24.1C1.** *If the name of a corporate body has changed (including change from one language to another), establish a new heading under the new name for items appearing under that name. Refer from the old heading to the new and from the new heading to the old.*

For corporate bodies which change their name, a new heading has to be used for the new items and references between the old and the new headings should be established.

4.3.3.2   Variant names (rules 24.2 and 24.3)

Variations in names of corporate bodies are handled in rules 24.2 and 24.3. The main rules are:

> **24.2B.** *If variant forms of the name are found in items issued by the body, use the name as it appears in the chief sources of information (see 1.0A) as opposed to forms found elsewhere in the items.*
> **24.3A1.** *If the name appears in different languages, use the form in the official language of the body. If there is more than one official language and one of these is English, use the English form.*

The instructions call for using the name as it appears in the chief source of information or for using the English form when there is more than one official language. More conditions are analysed in the latter rule, but they account for relatively uncommon cases.

> *International Federation of Library Associations and Institutions* appears in the chief source of information and should be used instead of *IFLA*.
> *Societe historique franco-americaine* is the official name and should be preferred over *Franco-American Historical Society*.

> **24.3E1.** *Use the conventional name of a government, unless the official name is in common use. The conventional name of a government is the geographic name (see chapter 23) of the area (e.g. country, province, state, county, municipality) over which the government exercises jurisdiction.*

> e.g. France *and not* Republique française

4.3.3.3   Additions (rule 24.4)

The name of a corporate body may not convey the idea of the body and therefore an addition to the name is imperative (rule **24.4B1**). This helps in disambiguating the role of the body. The addition goes into parentheses after the name, e.g. *John Murray (Firm)* or *Crashdog (Musical group)* or *Acción Social Ecuménica Latinoamericana (Organization)*. The terms used for general designations should be in English. However, these qualifiers are not strictly specified in AACR2, so the cataloguer has either

to borrow some term appearing in the AACR2 examples or to freely select a more appropriate one.

The country, state, province etc. name may be added to identify a corporate body or to distinguish two or more bodies which have the same or similar names (rule **24.4C2**), e.g. *Institut français d'Athènes (Greece)*, *Humane Society (Philadelphia)*, *Humane Society (New York)*.

According to rule **24.4C5**, the name of an institution should be added to a corporate body instead of the local place name if the institution's name is commonly associated with the name of the body, e.g. *Newman College (University of Melbourne)*, *Trinity College (University of Cambridge)*.

4.3.3.4   Omissions (rule 24.5)

Certain words have to be omitted from the name for sorting purposes or because they do not add to the identification of the corporate body. For example, the initial articles are usually omitted (rule **24.5A1**), e.g. *Library Association* instead of *The Library Association*.

Terms indicating incorporation or state ownership of a corporate body are also excluded from the endings of names (rule **24.5C1**), e.g. *American Ethnological Society* and not *American Ethnological Society Inc*. However, if the adjectival term or abbreviation is needed to make clear that the name is that of a corporate body, then it is not omitted, e.g. *UBS Limited*.

4.3.3.5   Conferences, congresses, meetings, etc. (rule 24.7)

The variations in names of conference, congresses, meetings, symposiums, conventions, colloquiums and other events are discussed in rule **24.3 F**. This section concerns omissions from and additions to conference names, which are quite common in cataloguing of conference proceedings.

The indication of a conference's number, frequency or year of convocation should be omitted from its name (rule **24.7A1**), e.g. *International Conference on Amber in Archaeology* and not *Fourth International Conference on Amber in Archaeology*.

Rules **24.7B2**, **24.7B3** and **24.7B4** establish the conditions for adding some data at the end of a conference's name in parentheses. The number of the conference, the year(s) and the place(s) in which it was held may be added, separated by *space colon space* (:).

> *Archaeological Conference (1988 : Santiniketan, India)*

The number, as an ordinal numeral (e.g. 2nd), is added only if the conference occurs regularly with the same name, e.g.:

> *International Conference on Amber in Archaeology (4th : 2001 : Talsi, Latvia)*

Further instructions for additions to or omissions from the names of other types of corporate bodies (e.g. festivals, local churches, radio and television stations, legislative bodies etc.) are reviewed in chapter 24. Most ambiguities are handled by omitting data from or adding it to the name of the corporate body.

4.4   Uniform title

A uniform title is a new or modified title assigned to a work which either has no title or has appeared under more than one title. According to AACR2, uniform titles are used for the following purposes (rule **25.1A**):

· to bring together all catalogue entries for a work when various manifestations (e.g., editions, translations) of it have appeared under various titles,
· to identify a work when the title by which it is known differs from the title proper of the item being catalogued,
· to differentiate between two or more works published under identical titles proper,
· to organize the file.

In brief, a uniform title brings together all editions of a work and distinguishes different works of identical titles. Nevertheless, not all libraries resort to this practice. The decision to use uniform titles depends on one or more of the following conditions:

1 how well the work is known
2 how many manifestations of the work are involved
3 whether another work with the same title proper has been identified
4 whether the main entry is under title
5 whether the work was originally in another language
6 the extent to which the catalogue is used for research purposes.

Instructions in chapter 25 deal separately with works created before and after 1500 and works of certain types, such as laws, treaties, official papal communications etc. Some examples of uniform titles are:

Arabian nights (*a uniform title for 'A thousand and one nights'*)
Iliad (*a uniform title for various editions of Homer's Iliad*)

Essentially, uniform titles are intended for well-known works published in different mediums and languages. If the library maintains an authority file, then the cataloguer should consult it before attempting to devise a new title. Also AACR2 provides several self-explanatory examples to make use of.

4.5   References and authority control

As discussed in Chapter 1 of this book, authority control is the maintenance of standard forms of headings and the use of cross-references from unused and related headings to predict potential user requests. The selection of headings is governed by AACR2 instructions, as elaborated in the previous sections. Authority control is not a process analysed in AACR2 per se, but a practice resulting from the management of the form of headings.

It is implemented with the usage of authority files, which contain authorized headings for persons and corporate bodies, the uniform titles, the series and the subject

headings. Through *see* and *see also* references, covered in chapter 26 of AACR2, the relations among the different headings are established.

A *see* reference is made from a form of the name of a person or a corporate body or title of a work to the form that has been chosen as a name or uniform title heading, or as a title entry (rule **26.1B1**). It creates a reference from a heading that is not used to the chosen heading. For instance, the chosen heading below is *Gilbert, Anthony, 1899-1973*, and there is a *see* reference to it. The *Arabian nights* is the authorized heading, and *Thousand and one nights* ('A' is omitted in the index for sorting purposes) points to it.

> Gilbert, Anthony
>   *See:* Gilbert, Anthony, 1899-1973

> Thousand and one nights
>   *See:* Arabian nights

A *see also* reference is made from one name or title heading to another related name heading, uniform title, or title (rule **26.1C1**). Both headings are used for different works.

> Asimov, Isaac, 1920-1992
>   *See Also:* Dr. "A", 1920-1992
>   *See Also:* French, Paul, 1920-1992

> Westmacott, Mary, 1890-1976
>   *See Also:* Christie, Agatha, 1890-1976

Authority files are usually encoded using the MARC 21 format for authority data.[1] Authorized headings, *see* and *see also* references are encoded in different data fields. The LC maintains the Library of Congress Authorities (authorities.loc.gov) and users are able to download headings in MARC format. MARC is discussed in Chapter 11.

4.6 Summary

After the creation of the bibliographic description, cataloguers have to determine the access points and their form and to handle them consistently in the catalogue. These topics are covered in chapters 21 to 26 of AACR2. This chapter has presented the main guidelines for selecting and forming the headings. The discussion has aimed to present the more frequent cases and to explain the approaches to choosing the main and added entry headings. The necessary amendments to headings, so as to distinguish between identical names and to bring together all the works of a single author who has written under different names, have also been considered. Topics like authority control, the types

of references between headings and uniform titles that bring together all editions of well-known works and distinguish different works of identical titles were also touched upon.

These topics complete our analysis of descriptive cataloguing using AACR2. By now readers should be able to develop first- and second-level bibliographic records and to reflect on the information presented in online catalogues, e.g. why author names are recorded as *Smith, Russell E. (Russell Edgar)* or *Christie, Agatha 1890-1976* and not following the regular convention *Name Surname*. The next two chapters focus on the new cataloguing standard RDA and the conceptual models on which it is based. Subject cataloguing is discussed in the subsequent chapters.

4.7 Review questions

1 What is the purpose of chapter 21 of AACR2?
2 Which sources can be used to determine the access points?
3 What are the main and added entry headings in works of single personal authorship?
4 What are the main and added entry headings in works where two persons share the authoring responsibility?
5 What are the main and added entry headings in works where four persons share the authoring responsibility?
6 What are the main and added entry headings in works emanating from a single corporate body?
7 Discuss some cases where the main entry is made under the title.
8 What are the main and added entry headings for the work 'Finches & sparrows / Peter Clement ; Illustrated by Alan Harris and John Davis'?
9 Which elements are commonly used for added entry headings?
10 Why do we need rules for deciding the form of author names?
11 What are the usual additions to author names for distinguishing identical names?
12 Pembroke College belongs to the University of Oxford, which is located in Oxford, UK. What is the correct heading?
13 The Second International Rice Blast Conference was held in 1998 in Montpellier, France. What is the correct heading?
14 The Study of Dialectical Operations : Designs and Methods Conference took place in Rochester, New York in 1974. What is the correct heading?
15 What is a uniform title and when it should be used?
16 Explain the difference between *see* and *see also* references and provide examples.

4.8 Reference

AACR2. (2005). *Anglo-American cataloguing rules: 2002 revision/2005 update*. Chicago: American Library Association.

4.9 Webliography

1. MARC 21 Format for Authority Data, http://www.loc.gov/marc/authority/.

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FRBR and FRAD: the conceptual models underlying RDA

5

5.1   Introduction

RDA is the new standard for descriptive cataloguing developed by the JSC and aimed to a replace the AACR.[1] The underlying conceptual models of RDA are the FRBR[2, 3] and the FRAD.[4] FRBR was initially released in 1998 and updated in 2009 and FRAD was released in 2009 and amended and corrected in 2013. These models are independent of any implementation and aim to model the bibliographic universe, which includes the items in libraries, bookstores, museums and other agencies with similar aims.

The focus of this chapter is on FRBR. We review the user tasks, the entities and their relationships defined in the model. Practical examples are used to elucidate the theoretical notions of FRBR. A short introduction to FRAD is given at the end of the chapter.

5.2   FRBR

FRBR was developed between 1992 and 1995 by the IFLA Study Group on Functional Requirements for Bibliographic Records and it was first published in 1998.[5] It views the bibliographic universe independently of any cataloguing code or implementation. FRBR is considered to be a replacement for the ISBD[6] models which served as the bibliographic foundation for cataloguing codes like AACR2. FRBR deals with the content of bibliographic descriptions, and not with authority data, which are discussed in FRAD.

As is stated in the introduction to FRBR, the key factors contributing to this change have been:

- the introduction and ongoing development of automated systems for the creation and processing of bibliographic data, and
- the growth of large-scale databases, both national and international in scope, that contain records contributed and used by thousands of libraries participating in shared cataloguing programmes.

In other words, it is the advances in the digital environment that have necessitated an up-to-date model for bibliographic data that would integrate smoothly with networked data management and resource-discovery tools.

The objectives of the study on FRBR were to:

1 provide a clearly defined, structured framework for relating the data that are recorded in bibliographic records to the needs of the users of those records, and
2 recommend a basic level of functionality for records created by national bibliographic agencies.

The recommended model is based on entities and relationships between entities. The entity-relationship (ER) model is a data model for describing in an abstract way the data and their attributes (characteristics) and the relationships among the various classes of data. It is used extensively for designing the logical structure of databases, which can be implemented thereafter on any database management system. The ER model is thus considered as being independent of any physical implementation, which is an essential requirement for FRBR. Different entities for describing the physical details of an item and for communicating the conceptual content, i.e. the story being told in an item, e.g. a book,[2] are defined in the model.

5.2.1   The entities

FRBR models the bibliographic data using entities to represent data that are distinctly identified. It also uses relationships to establish the associations between the different entities. Examples of entities are *person* and *work*. These entities are related, as one or more persons are considered responsible for one or more works. To build an ER model the designer has to identify the entities, the characteristics of the entities (e.g. work has a title and person has a name) and the relationships between the entities.

   FRBR remodels the bibliographic universe in a top-down approach, going from the abstract level of conceptual content to the lower level concerning the physical properties of a bibliographic object. Concepts like 'work', 'item', and 'expression', which to some extent are used interchangeably in AACR2, are clarified in this paradigm. FRBR defines three groups of entities to express the structure and relationships of bibliographic and authority records:

1 **Group 1 entities: Work, Expression, Manifestation, Item**
   This group consists of the products of intellectual or artistic endeavor that are named or described in bibliographic records.
2 **Group 2 entities: Person, Corporate Body**
   The second group includes the entities responsible for the intellectual or artistic content, the physical production and dissemination, or the custodianship of such products.
3 **Group 3 entities: Concept, Object, Event, Place**
   The last group consists of the additional set of entities that serve as the subjects of intellectual or artistic endeavor.

5.2.2   Group 1 entities: work, expression, manifestation, item

This group contains the entities dealing with the intellectual or artistic content of the products to be described. The entities defined in this group are:

1 *Work*: defined as a distinct intellectual or artistic creation.
2 *Expression*: the intellectual or artistic realization of a *work* in the form of alpha-numeric, musical or choreographic notation, sound, image, object, movement etc., or any combination of such forms.
3 *Manifestation*: the physical embodiment of an *expression* of a *work*.
4 *Item*: a single exemplar of a *manifestation*.

The first two entities reflect the intellectual or artistic content and the third and fourth reflect the physical form of a product.

5.2.2.1   Work

FRBR recognizes that there is no single material object one can point to as the *work*. Instead, the *work* entity represents an abstract concept and, as B. Tillett puts it, is the 'ideas in a person's head'.[2] A work is identified by different realizations, or to use FRBR's terminology, *expressions* of the work. Some examples of works cited in the FRBR study are:

> William Shakespeare's *Romeo and Juliet*
> Henry Gray's *Anatomy of the human body*

These works do not refer, for example, to a specific book published by a particular publishing house in a certain language. They merely refer to the conceptual content underlying all the versions or formats of this work.

To further illuminate the concept of *work*, let us consider the work *Murder on the Orient Express* by Agatha Christie. This work is realized at least as: a book in English and in other languages; a comic strip in English; and a radio broadcast by the BBC. Focusing on the 'English book' *expression*, different *manifestations*, i.e. editions by different publishers, are available. So a work becomes a concrete object only through specific manifestations.

5.2.2.1.1   New work or new realization of the same work?

The FRBR study provides some clarifications on what is considered as a new work or as a realization (expression) of the same work.

The following are identified as alternative *expressions* of the same work:

- revisions or updates of an earlier text
- abridgements or enlargements of an existing text
- translations from one language to another
- dubbed and subtitled versions of a film
- the addition of parts or an accompaniment to a musical composition
- musical transcriptions and arrangements.

Nevertheless, a modification of some work could be considered as a *new work* if it involved a significant degree of independent intellectual or artistic effort (FRBR, p. 18). Consequently, the following are handled as new works:

- paraphrases, rewritings, adaptations for children, parodies
- musical variations on a theme and free transcriptions of a musical composition
- adaptations of a work from one literary or art form to another (e.g., dramatizations, adaptations from one medium of the graphic arts to another, etc.)
- abstracts, digests and summaries.

Expanding the previous example of Agatha Christie's work *Murder on the Orient Express*, the Spanish translation *Asesinato en el Orient Express* represents a *new expression* of the same work, while *Murder on the Orient Express Lesson Plans*

and *Murder on the Orient Express – Teachers Guide* represent *new works* which could be expressed in alpha-numeric or another form. Further, the 1974 British film *Murder on the Orient Express* directed by Sidney Lumet is also a *new work*, as it is an adaptation of the crime novel from one literary form to another.

5.2.2.2 Expression

Expression is defined in FRBR as 'the intellectual or artistic realization of a *work* in the form of alpha-numeric, musical, or choreographic notation, sound, image, object, movement, etc., or any combination of such forms'. From this definition and the preceding discussion on the *work* entity, it is clear that a work is realized through an expression. It is the expression that transforms a work from an idea to something that is, in a sense, demonstrable.

To further clarify what is considered to be an expression of a work, let us return to Agatha Christie. Some examples of *different expressions* of her crime novel *Murder on the Orient Express* are:

the English text
version translated into Spanish
version translated into Greek
a radio broadcast.

But what is considered to be a different expression of a work? In the FRBR study it is specified that 'expression encompasses, for example, the specific words, sentences, paragraphs, etc. that result from the realization of a work in the form of a text, or the particular sounds, phrasing, etc. resulting from the realization of a musical work'.

Observing the above list, it is clear that when a work is realized in a certain form (e.g. text, spoken word etc.) with specific words and sentences or specific images and sounds, then it counts as a *new expression*. The original English and the Spanish and the Greek translations of the same work by Agatha Christie are all different expressions because they use different words and sentences but do not involve a significant degree of independent intellectual or artistic effort to be considered as new works.

A new edition of the English text, with perhaps different fonts and page layout and general typographical changes does not count as a new expression. Similarly, minor changes in the text, such as spelling corrections, are considered as variations within the same expression. However, if the text is revised, modified, augmented with illustrations, then the resulting expression is considered to be a *new expression*. In that way new editions are considered to be new expressions of the same work.

5.2.2.3 Manifestation

Manifestation is defined in FRBR as the 'physical embodiment of an *expression of a work*'. Manifestation is an expression of a work in a certain physical form. For example, the English text expression of the work *Murder on the Orient Express* was first published in UK by the Collins Crime Club in 1934 and thereafter was published by several different publishers, e.g. Pocket Books in 1940, Penguin Books in 1948, Collins in 1974, Pocket Books in 1984, Berkley Trade in 2000, Harper in 2011, to

name a few. It was even published in digital form (ebook) by HarperCollins in 2003. All these editions are different *manifestations* of the same *expression* of the same *work*. They vary in page layout, binding, font size, etc. But they contain the same intellectual content and thus concern the same expression of the work.

FRBR identifies that the boundaries between one manifestation and another are drawn on the basis of both intellectual content and physical form. The display characteristics (e.g. page layout or font size), physical medium (e.g. paper or audio cassette) and the container (e.g. cartridge or optical disc) affect the form and therefore result in different manifestations. If the intellectual content is changed, then this results again in a new manifestation. Substantial modifications (e.g. adaptations, addition of illustrations etc.) in the intellectual content result in new expressions and thus in new manifestations. Minor modifications, e.g. spelling corrections, are considered as the same expression, but they generate new manifestations.

5.2.2.4   Item

The last entity is the *item*, which is defined as a single exemplar of a *manifestation*. It is a specific physical object exemplifying a particular manifestation. For example, a specific copy of the 1934 edition of the book *Murder on the Orient Express* book is identified as an item in the FRBR. An item could be a single physical object (e.g. a one-volume monograph) or it might consist of more than one physical object (e.g. a movie issued on two separate optical discs).

An item is defined as a distinct entity to enable the separate identification and description of the unique features of individual copies. For instance, a copy autographed by the author is different from an item without the signature. Some characteristics that may distinguish items are the binding, the condition of the item (e.g. damaged cover page or inside pages, interior marks), the existence of notes, the absence of an appendix, etc.

Since most of the items that a library holds are in comparable condition, FRBR recognizes that in terms of intellectual content and physical form an item exemplifying a manifestation is normally the same as the manifestation itself. However, the model provides the opportunity to distinguish between two items of the same manifestation that have visual or other differences.

The examples below follow the graphical conventions used in the FRBR study to depict the hierarchical relationship between the entities w(ork), e(xpression), m(anifestation), i(tem).

Example from the FRBR study (FRBR[3], *p. 24*)

☐ **w₁** Ronald Hayman's *Playback*
  ☐ **e₁** the author's text edited for publication
    ☐ **m₁** the book published in 1973 by Davis-Poynter
      ☐ **i₁** paperback copy autographed by the author
      ☐ **i₂** paperback copy

Examples based on Agatha Christie crime novels

- ☐ w_2 Agatha Christie: *Murder on the Orient Express*
  - ☐ e_1 the English text
    - ☐ m_1 the book published in 1934 by Collins Crime Club
      - ☐ i_1 hardback copy autographed by the author
      - ☐ i_2 hardback copy
    - ☐ m_2 the book published in 1948 by Penguin Books
      - ☐ i_1 hardback copy
    - ☐ m_3 the book published in 2011 by Harper
      - ☐ i_1 paperback copy
      - ☐ i_2 paperback copy
    - ☐ m_4 ebook published in 2003 by HarperCollins
      - ☐ i_1 pdf file
  - ☐ e_2 version translated into Spanish
    - ☐ m_1 the book published in 2004 by Rba Libros
      - ☐ i_1 paperback copy
    - ☐ m_2 the book published in 2013 by Rba Libros
      - ☐ i_1 paperback copy
  - ☐ e_3 a radio broadcast
    - ☐ m_1 an audio cassette by BBC Audiobooks Ltd, 1998
      - ☐ i_1 audio cassette
    - ☐ m_2 an audio CD by BBC Audiobooks Ltd, 2004
      - ☐ i_1 audio CD
- ☐ w_3 Film based on *Murder on the Orient Express* by Agatha Christie
  - ☐ e_1 a film in English
    - ☐ m_1 the 1974 British film directed by Sidney Lumet, starring Albert Finney as Hercule Poirot in videotape
      - ☐ i_1 videotape
    - ☐ m_2 the 1974 British film directed by Sidney Lumet, starring Albert Finney as Hercule Poirot in CD
      - ☐ i_1 CD (optical disc)
- ☐ w_4 Comic strip based on *Murder on the Orient Express* by Agatha Christie
  - ☐ e_1 comic strip in English
    - ☐ m_1 the comic strip published in 2007 by HarperCollins
      - ☐ i_1 paperback comic strip book

The above examples selectively show only some of the expressions of the works. For example, the work w_2 has been translated into some 100 languages, which total an equal number of expressions. The works w_3 and w_4 are classified as different works than w_2 because they involve a significant degree of intellectual or artistic effort that is separate from the original one.

In the majority of the above examples the items are essentially the same as their respective manifestations, as explained in the FRBR study about the equivalence of manifestations and items with respect to their intellectual content. Items need to be distinctly identified only if they have some characteristics that are unique to a particular copy, e.g. a copy autographed by the author.

Why have so many entities to describe a product?

Describing a product in a top-down approach, progressing from the idea to the individual item, enables a distinction between the intellectual content pertaining the different expressions and the physical details of their final embodiments.

On a practical level, the entity *work* supports the aggregation of various expressions of the same idea and the establishment of direct and indirect relationships among these expressions. The entity *expression* enables the description of the intellectual or artistic attributes of a particular realization of a work and serves to identify the differences between the other realizations of a work.

The entity *manifestation* supports the management of the shared characteristics of particular embodiments of an expression and the description of the physical characteristics of a set of items. The last entity, *item*, enables the identification of the unique characteristics of a specific instance (e.g. copy of a book) of a manifestation and serves in transactions such as circulation.

Overall, the layered description of products will more effectively support various user requests regarding either the content or the form of the desired information.


5.2.2.5 Relationships between group 1 entities

The identification of relationships is a vital step in any ER model. It aids in establishing the relationships between the different entities and the cardinality of the relationships. Cardinality specifies how many instances of an entity relate to one instance of another entity, e.g. how many works relate to an expression, but also how many expressions relate to a work. Practically, a relationship provides a link between the entities and thus, in library products, the means for a user to navigate through the bibliographic universe.

The ER model is depicted graphically in computer science projects, providing a quick and universally understandable technical design. Although there are different notations used in ER diagrams, entities are represented as rectangles or boxes in all diagramming conventions. Relationships are represented as diamonds or lines connecting the entity shapes, accompanied by specific marks to depict the cardinality of the relationships.

Figure 5.1 shows the ER diagram of the group 1 entities using the diagrammatic conventions of the FRBR study. The entities are represented as rectangles and the relationships as lines connecting two entities. The phrases 'is realized through', 'is embodied in', 'is exemplified by' are short explanations of the high-level logical relationships between the respective entities.

There are either one or two arrows at the ends of the connecting lines, indicating the cardinality of the relationship. The cardinalities of the relationships of group 1 entities are either *one-to-many* or *many-to-many*.
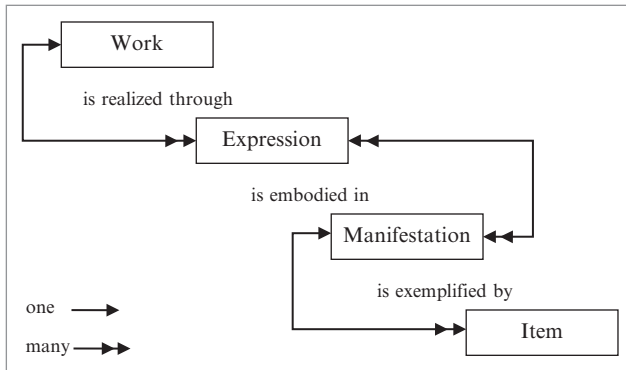
Figure 5.1 ER diagram of group 1 entities

- *One-to-many*: there is a single arrow at one end of the connecting line and a double arrow in the other end. A *one-to-many* relationship means that one instance of an entity is connected with many instances of the other entity. The end with the single arrow is the *one* part of the one-to-many relationship and the end with the double arrow is the *many* part of the relationship.

     The 'is realized through' one-to-many relationship of the *work–expression* entities means that one work is realized through one or more than one expressions. The relationship in the reverse direction, that is expression to work, reads one expression realizes (i.e. is associated to) one work only.

     Likewise, the 'is exemplified by' one-to-many relationship of the *manifestation–item* entities means that one manifestation is exemplified by one or more items, and in the reverse direction that one item exemplifies exactly one manifestation.

- *Many-to-many*: both ends of this relationship type have double arrows. This signifies that many instances of one entity are connected with many instances of the other entity.

     The 'is embodied in' many-to-many relationship of the *expression–manifestation* entities means that one expression is embodied in one or more manifestations and that one manifestation embodies one or more than one expressions.

     Continuing the previous examples of Agatha Christie's works, the work w_2 *Murder on the Orient Express* is realized (at least) through expressions e_1, e_2 and e_3, but each of the three expressions is related only to work w_2.

     The expression e_1 of the work w_2 is embodied in manifestations m_1, m_2, m_3 and m_4. Based on the many-to-many relationship type between the expression and the manifestation entities, one or more of the manifestations m_1, m_2, m_3 and m_4 could embody one or more of the other expressions e_2 and e_3 of the work w_2. This allows more complex relationships between manifestations and expressions to be established, e.g. a new compound manifestation composed of a book containing the English text of a work (e.g. expression e_1 of the w_2 work) and an accompanying CD with a spoken narration of the text of the book (e.g. expression e_3 of the w_2 work).

     Manifestation m_1 of the work w_2 is exemplified by items i_1 and i_2. These items are individual hardback copies. One of them has an additional feature, i.e. it is an autographed hardback copy. An item exemplifies only one manifestation but a manifestation is exemplified by many individual copies.

The high-level relationships between work and expression, expression and manifestation, and manifestation and item serve to establish implicit 'sibling' relationships, as they are called in FRBR, between the various expressions of a work, between the various manifestations of an expression and between the items exemplifying a manifestation. For instance, the e_1, e_2, e_3 expressions of the work w_2 are implicitly related, as they are all realizations of the same work.

5.2.2.6   Other types of relationships between group 1 entities

The FRBR study reviews more types of bi-directional relationships between group 1 entities that operate between specific instances of entities (e.g. between one work and another work or between an expression of one work and an expression of another work). The following examples, extracted from the FRBR study (FRBR, pp. 65 and 70), illustrate these kinds of relationships:

Examples of relationships between group 1 entities

Work-to-work relationship
□ **w_1** *The British journal of social and clinical psychology*
         is continued in part by →
         ← continues in part
□ **w_2** *The British journal of social psychology*

Expression-to- expression relationship
□ **w_1** Charles Dickens: *A Christmas carol*
   □ **e_1** the author's original English text
         has a translation →
         ← is a translation of
   □ **e_2** Tamil translation by V. A. Venkatachari

The categories of relationships identified in FRBR between instances of group 1 entities are:

- *Work-to-work relationships*: these consist of pairs of relationship statements like 'has a supplement–supplements' or 'has a summary–is a summary of' between works.
- *Expression-to-expression relationships*: these encompass relationships between expressions of the same work or relationships between expressions of different works, e.g. 'has an abridgment–is an abridgment of'.
- *Expression-to-work relationships*: these are relationships that can be drawn between an expression of one work and a different work. They capture associations between expressions and works implemented as supplements, adaptations, transformations, etc.
- *Manifestation-to-manifestation relationships*: 'has a reproduction–is a reproduction of' and 'has an alternate–is an alternate to' pairs of relationships are included in this category to represent the associations between different manifestations of the same expression.
- *Manifestation-to-item relationships*: the only relationship type in this category is 'has a reproduction–is a reproduction of', which indicates that a given manifestation is the result of reproducing a particular item.

- *Item-to-item relationships*: the relationship types 'has reconfiguration–is a reconfiguration of', 'has a reproduction–is a reproduction of' associate items where one derives from or is a reproduction of the other.

In addition, FRBR identifies a 'whole/part' relationship at the *work* level, at the *expression* level, at the *manifestation* level and at the *item* level. These types of relationships support the representation of bibliographic relations like volume/issue in a serial publication work.

5.2.2.7   Attributes of group 1 entities

Each entity in an ER model has a set of characteristics which are called attributes. The attributes itemize the properties of each entity and have values drawn from a set of meaningful values. For example, the work entity has a 'title' and a 'date', which are two of the attributes of the entity. 'Place of publication/distribution' is defined as an attribute of the manifestation entity. The attributes of the entity provide the means for users to formulate specific queries about a particular entity, e.g. show works with the title 'Robinson Crusoe'. Through the values of the attributes, users assess the relevance of the retrieved entities.

The FRBR study identifies two categories that attributes fall into. The first category includes the physical characteristics (e.g. the physical medium, dimensions of an object) and features such as statements appearing on the title page or on the cover. The next category consists of the assigned identifiers for an entity (e.g. a thematic catalogue number for a musical composition) and contextual information (e.g. the political context in which a work was conceived).

Each entity of the FRBR group 1 entities has a set of attributes derived from an analysis of the data included in bibliographic records. The principal sources used in the analysis included the ISBD, the Guidelines for Authority and Reference Entries (GARE, 2001), the Guidelines for Subject Authority and Reference Entries (GSARE, 1993) and the UNIMARC[7] Manual.

5.2.2.7.1   Attributes of a work
The following 12 attributes are defined in the FRBR study for the *work* entity:

1 title of the work
2 form of work
3 date of the work
4 other distinguishing characteristics
5 intended termination
6 intended audience
7 context for the work
8 medium of performance (musical work)
9 numeric designation (musical work)

10 key (musical work)
11 coordinates (cartographic work)
12 equinox (cartographic work).

Works are differentiated by the values of these attributes. The 'title' of *work*, as defined in FRBR, is the word, phrase or group of characters naming the *work*. There may be one or more titles associated with a *work* (e.g. different in language) and the bibliographic agency selects one of the titles to be the 'uniform title', to use the terminology of AACR2. The 'form' of a *work* is the class to which it belongs (e.g., novel, play, poem, concerto, map, drawing etc.). The 'date' of a *work* is the year it was originally created.

The other attributes are used to define some extra properties of the work. Not all of these attributes are relevant to every instance of a work, e.g. coordinates and the equinox are not applicable to books.

5.2.2.7.2 Attributes of an expression

The *expression* entity has 25 attributes associated with it:

1 title of the expression
2 form of expression
3 date of expression
4 language of expression
5 other distinguishing characteristic
6 extensibility of expression
7 revisability of expression
8 extent of the expression
9 summarization of content
10 context for the expression
11 critical response to the expression
12 use restrictions on the expression
13 sequencing pattern (serial)
14 expected regularity of issue (serial)
15 expected frequency of issue (serial)
16 type of score (musical notation)
17 medium of performance (musical notation or recorded sound)
18 scale (cartographic image/object)
19 projection (cartographic image/object)
20 presentation technique (cartographic image/object)
21 representation of relief (cartographic image/object)
22 geodetic, grid, and vertical measurement (cartographic image/object)
23 recording technique (remote sensing image)
24 special characteristic (remote sensing image)
25 technique (graphic or projected image)

Most of the attributes are self-explanatory. For example, attribute 15, 'expected frequency of issue (serial)' refers to the number of issues expected to circulate every year. Again, some attributes are applicable only to certain types of expressions, e.g. attributes 19 to 21 relate to cartographic materials only.

5.2.2.7.3 Attributes of a manifestation

A *manifestation* has even more attributes. More specifically, 38 attributes are defined for this entity. They cover properties related to publication, distribution and the physical form of the object:

 1 title of the manifestation
 2 statement of responsibility
 3 edition/issue designation
 4 place of publication/distribution
 5 publisher/distributor
 6 date of publication/distribution
 7 fabricator/manufacturer
 8 series statement
 9 form of carrier
10 extent of the carrier
11 physical medium
12 capture mode
13 dimensions of the carrier
14 manifestation identifier
15 source for acquisition/access
   authorization
16 terms of availability
17 access restrictions on the manifestation
18 typeface (printed book)
19 type size (printed book)
20 foliation (hand-printed book)
21 collation (hand-printed book)
22 publication status (serial)
23 numbering (serial)
24 playing speed (sound recording)
25 groove width (sound recording)
26 kind of cutting (sound recording)
27 tape configuration (sound recording)
28 kind of sound (sound recording)
29 special reproduction characteristic (sound
   recording)
30 colour (image)
31 reduction ratio (microform)
32 polarity (microform or visual projection)
33 generation (microform or visual projec-
   tion)
34 presentation format (visual projection)
35 system requirements (electronic resource)
36 file characteristics (electronic resource)
37 mode of access (remote access electronic
   resource)
38 access address (remote access electronic
   resource)

5.2.2.7.4   Attributes of an item

As already explained, normally an item is the same as the manifestation itself. There-
fore, the new attributes added to an item are only a few:

1 item identifier
2 fingerprint
3 provenance of the item
4 marks/inscriptions
5 exhibition history
6 condition of the item
7 treatment history
8 scheduled treatment
9 access restrictions on the item

The 'item identifier' is a number or code assigned by the institution that holds the
item. It could be the call number or any other number that could differentiate that item
from any other item in the same collection. The other attributes are used to uniquely
describe an item, e.g. the condition of the item.

5.2.3   Group 2 entities: person, corporate body

The entities of the second group are *responsible* for the content, the physical produc-
tion, the distribution and the care of entities of group 1. The group 2 entities defined in
FRBR are:

1 *Person*: encompasses individuals living or deceased related to a work, an expression, a man-
  ifestation or an item.
2 *Corporate body*: is defined as an organization or group of individuals and/or organizations
  acting as a unit and related to one or more entities of group 1.

5.2.3.1 Person

Individuals involved in the creation or realization of works or who are the subject of the works are considered as a *person*. Examples include authors, translators, illustrators, performers and individuals who are the subject of a biographical or autobiographical work. Some examples of a *person* entity are:

- □ **p₁** Frédéric François Chopin (*composer*)
- □ **p₂** Agatha Christie (*author*)
- □ **p₃** Benjamin Franklin (*subject of an autobiographical work*).

5.2.3.1.1 Attributes of a person

FRBR defines the following attributes for a *person*:

1 name of person
2 dates of person
3 title of person
4 other designation associated with the person.

The 'name' is a sequence of characters or words by which the *person* is known. If a *person* is known by more than one name the bibliographic agency should select one of these names and provide references to the other variants.

The 'dates' refer to the exact or probable dates of birth and/or death of a *person*. The 'title' is a word or phrase indicating the rank or nobility (e.g. Duke, Professor) or is a term of address (e.g. Sir, Mrs.) of a *person*. The last attribute is a numeral, word or abbreviation (e.g. III, Jr.) associated with a *person*.

5.2.3.2 Corporate body

This entity includes organizations and groups of individuals known by a particular name. Occasional groups, meetings, conferences, festivals, exhibitions, territorial authorities with governmental roles are also considered as a *corporate body*, e.g.:

- □ **cb₁** The Acropolis Museum
- □ **cb₂** World Congress of Philosophy
- □ **cb₃** Her Majesty's Government
- □ **cb₄** City of London Corporation

A *corporate body* may be involved in the creation or realization of a *work* or it could be the *subject* of a work.

5.2.3.2.1 Attributes of a corporate body

The following attributes have been identified for a *corporate body*:

1 name of the corporate body
2 number associated with the corporate body
3 place associated with the corporate body
4 date associated with the corporate body
5 other designation associated with the corporate body.

The 'name' is the sequence of words by which the body is known, while a 'number' is the numerical designation of a meeting, conference, exhibition, fair etc. The 'place' and 'date' is the place and date(s) that a particular meeting or other event occurred. The last attribute is a word or phrase such as an abbreviation indicating incorporation (e.g. Inc., Ltd.) or a term used as a suffix to the name (e.g. firm) so as to distinguish or clarify the role of the corporate body.

5.2.3.3   Relationships between group 2 entities and group 1 entities

Group 2 entities are linked to group 1 entities through four types of 'responsibility'. As depicted in Figure 5.2, all the relationships between the entities are *many-to-many*. The double arrow pointing to the person and corporate body means that one work may be created by one or more persons and/or corporate bodies. The double arrow pointing to the work denotes that a person and/or a corporate body can be responsible for the creation of one or more works.

Likewise, an expression is realized by one or more persons and/or corporate bodies. Viewing the relationship from the opposite direction, one person and/or corporate body may realize one or more than one expressions. A manifestation may be produced by one or more than one group 2 entities and a group 2 entity can produce one or more manifestations. The same principle applies to the ownership of an item by one or more persons or corporate bodies. A person or a corporate body can own a single item or more than one item.
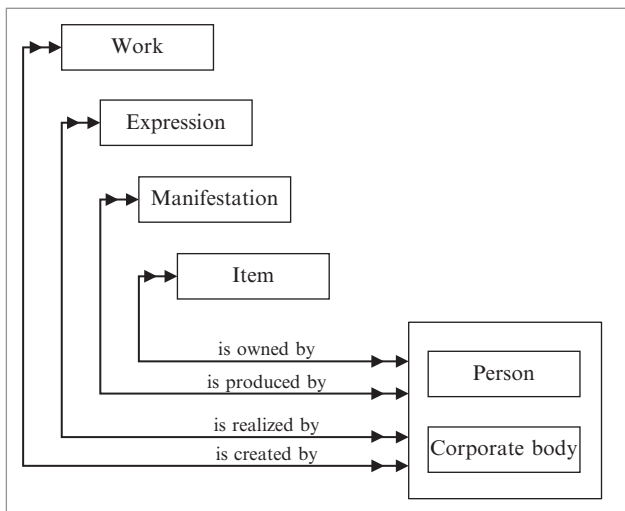
Figure 5.2 Relationships between group 1 entities and group 2 entities ('responsibility' relationships)

These logical relationships serve to represent the common bibliographic responsibility relationships of authorship, editorship, translation, illustration, adaptation, publication etc. They also facilitate the aggregation of all the works, or expressions, or manifestations, or items under the person and/or corporate body that is responsible or is the owner of them. The following examples depict the linking of a person (author) with some works and a corporate body (publisher) with certain manifestations.

Examples of relationships between group 2 and group 1 entities

- p_1 Agatha Christie
  - w_1 *Murder in Mesopotamia*
  - w_2 *The Mysterious Affair at Styles*
  - w_3 *The Murder at the Vicarage*
  - . . .

- cb_1 HarperCollins
  - m_1 the 2009 e-book *Murder in Mesopotamia*
  - m_2 the 2012 paperback *The Mysterious Affair at Styles*
  - . . .

5.2.4 Group 3 entities: concept, object, event, place

The third group encompasses the entities that serve as the subjects of works. The entities of group 3 are:

1 *Concept*: an abstract notion or idea (e.g. economics).
2 *Object*: a material thing (e.g. Buckingham Palace).
3 *Event*: an action or occurrence (e.g. the Age of Enlightenment).
4 *Place*: a location (e.g. New York).

5.2.4.1 Concept

The entity *concept* may be the subject of a *work* entity. FRBR cites the following paradigms of abstract notions and ideas as fitting into the concept entity: fields of knowledge, disciplines, schools of thought (philosophies, religions, political ideologies etc.), theories, processes, techniques, practices etc., e.g.:

- c_1 Library science
- c_2 Impressionism
- c_3 Socialism
- c_4 Archimedes' buoyancy principle
- c_5 Albert Einstein's theory of general relativity.

5.2.4.2   Object

Again, an entity defined as *object* serves as a subject of a *work*. This entity includes a range of material things, such as animate and inanimate natural objects, products of human creation etc. Things that no longer exist can be defined as *objects* as well. Some examples of object are:

- ☐ o_1 The Statue of Liberty
- ☐ o_2 The White House
- ☐ o_3 Buckingham Palace
- ☐ o_4 The Parthenon.

5.2.4.3   Event

Historical events, epochs, periods of time, battles and the like fall within the *event* entity. Events that could be acknowledged as a creator of a work within the rationale of group 1 and group 2 relationships are excluded from this entity. For instance, the World Congress of Philosophy is acknowledged as a corporate body that could be held responsible for the proceedings of the congress. Thus it could be argued that it cannot be recognized as an event, in general. But if it is the subject of a work, then it could be treated as an instance of the *event* entity. Examples of events could be:

- ☐ e_1 The Battle of Waterloo
- ☐ e_2 The Age of Reason
- ☐ e_3 The Cretaceous period
- ☐ e_4 The assassination of Abraham Lincoln.

5.2.4.4   Place

The last entity defined in group 3 is *place*. Any location, terrestrial or extra-terrestrial, is considered as a *place*. Only locations that are the subject of a *work* are treated as a *place* entity. Under this perspective, we present below some examples of places that are the subject of travel guides or other books:

- ☐ pl_1 Glasgow
- ☐ pl_2 Crete
- ☐ pl_3 The Montenegro Mountain
- ☐ pl_4 The Great Barrier Reef
- ☐ pl_5 The Bermuda Triangle.

5.2.4.5   Attributes of group 3 entities

The single attribute 'term' is defined for each of the four group 3 entities, i.e. 'term' for the *concept*, 'term' for the *object*, 'term' for the *event*, 'term' for the *place*. The value of the 'term' attribute may be any word or phrase consisting of letters or any other symbol used to name or designate the respective entity, e.g. 'social science' for a concept or 'New York' for a place.

5.2.5 'Subject' relationships between a work and the entities in groups 1, 2, 3

As already observed in the previous sections, *concepts*, *objects*, *events* and *places* are treated as group 3 entities, provided that they serve as a subject of a *work*. Figure 5.3 depicts these 'subject' relationships between a *work* and the group 3 entities. Additionally, a *work* may have as a subject any entity of the other two groups, even of another *work*, e.g. *A Commentary on Homer's Odyssey* has as its subject 'Homer's Odyssey'.

All the relationships are many-to-many, meaning that a *work* has as its subject one or more than one *work*, *expression*, *manifestation*, *item*, *person*, *corporate body*, *concept*, *object*, *event* and/or *place*. For instance, the book *Napoleon and Wellington: the Battle of Waterloo and the Great Commanders Who Fought It* has as its subject at least two *person* entities and an *event* entity. Viewing it from the reverse direction, any one of the group 1, 2 and 3 entities may be the subject of one or more than one *work*. For example, Princess Diana is the subject of several works, e.g. the books *The Diana Chronicles* and *Diana, Queen of Style*, an audio recording *Diana, Princess of Wales: A Tribute*, the movie *The Spirit of Diana* etc.
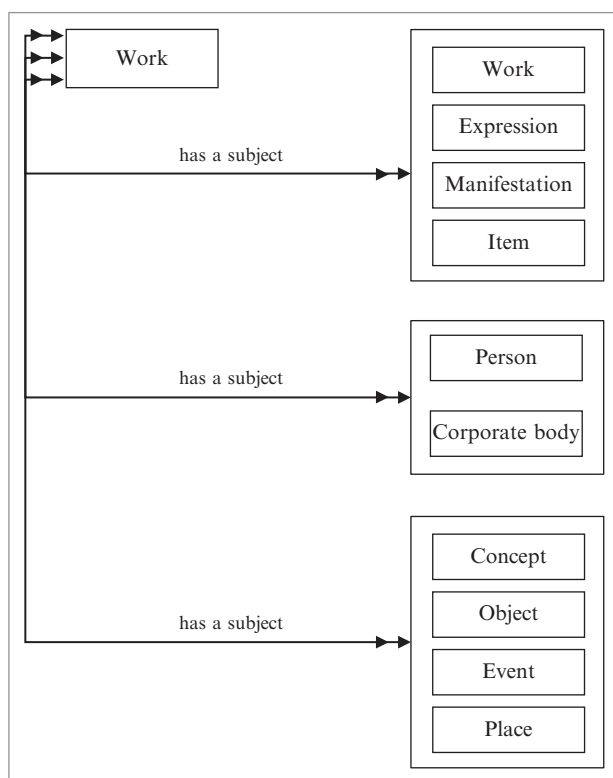
Figure 5.3 'Subject' relationships between *work* and group 1, 2 and 3 entities

5.2.6   User tasks

The FRBR study centres on the user tasks performed when searching and interacting with national bibliographies and library catalogues. These tasks are:

1 *Find* one or more entities that correspond to the search criteria of a user.
2 *Identify* an entity, that is, confirm that an entity retrieved corresponds to the entity sought by the user.
3 *Select* an entity that meets the user's requirements with respect to content, physical format, etc.
4 *Obtain* (or acquire) access to the selected entity described (e.g. access an entity electronically through an online catalogue).

These four generic user tasks are reviewed at the end of the FRBR study with respect to the entities of group 1. The first three tasks pertain to all the entities of group 1, i.e. *work*, *expression*, *manifestation* and *item*. For instance, users may wish to *find* a *work*, an *expression*, a *manifestation* or an *item*. The last user task, i.e. *obtain*, applies only to those *manifestation* and *item* entities which are real objects and not to abstract concepts like a *work* or an *expression*. FRBR defines the attributes on which users rely to accomplish each of the four tasks. For example, 'Title of the work' is one of the attributes for finding a work. The attributes 'Item identifier' and 'Access restrictions on the item' are important for the last user task, i.e. to *obtain* an item.

The study concludes by defining the basic functionality of national bibliographic records and the data required to accomplish those functions. In other words, only some of the attributes defined for the group 1 entities are fundamental for providing a basic set of services to users. The logical attributes of the group 1 entities are mapped to the data elements of ISBD, GARE and GSARE to create a bridge between FRBR and the older frameworks.

5.3   What is FRAD?

In 1999 the IFLA Division of Bibliographic Control and the IFLA Universal Bibliographic Control and International MARC Programme (UBCIM) established the Working Group on Functional Requirements and Numbering of Authority Records (FRANAR). The aim of this group was to define the functional requirements of authority records by studying the current operations of authority files. The early drafts of the working group were released under the title *Functional Requirements for Authority Records (FRAR)*. The latest publication is titled *Functional Requirements for Authority Data (FRAD)*[4] and is a conceptual model aimed at providing a framework for the functional requirements and the data supporting authority control.

Like FRBR, it defines the entities, their attributes and the relationships between them and the user tasks. It also specifies the functions of the authority file and provides of mapping between entities and user tasks.

The user tasks as defined in FRAD are:

1 *Find* an entity or set of entities corresponding to stated criteria.
2 *Identify* an entity, i.e. to confirm that the entity represented corresponds to the entity sought.
3 *Contextualize*, i.e. place a person, corporate body, work, etc. in context; clarify the relationship between two or more persons, corporate bodies, works, etc.
4 *Justify*, i.e. document the authority data creator's reason for choosing the name or form of name on which a controlled access point is based.

The FRBR entities are also established in FRAD but extended with more attributes. For example, the attribute 'location' is included in the *item* entity. The FRBR entities are collectively known as 'bibliographic entities' in FRAD.

FRAD also expands FRBR with additional entities. An important addition is the *family* entity, which comes from the archival community. Family is defined in FRAD as 'Two or more persons related by birth, marriage, adoption, civil union, or similar legal status, or who otherwise present themselves as a family'. This definition includes royal families, dynasties, houses of nobility, patriarchies and matriarchies, groups of individuals sharing a common ancestral lineage etc. that could be established as responsible for a work. Other entities included in the model are *name*, *identifier*, *controlled access point*, *rules* and *agency*. The relationships between these entities and FRBR entities are modelled using entity relationship diagrams. Overall, this conceptual model organizes the data used in authority control and represents these data and the operations on them using an ER approach to clarify the underlying concepts and practices.

5.4 Summary

FRBR is a theoretical model, not bound to any implementation, in which the products are represented as a set of distinct but interrelated entities. Although it has been argued that it is somehow print oriented (Taylor, 2007 p. 5) because most of the examples in the FRBR study are about print resources, the entities and the relationships of the model serve to describe different kinds of products, from books to cultural objects. ISBD, which is the theoretical model that AACR2 is based on, is much closer to implementation, unlike FRBR, which is indeed a theoretical model defining only the high-level properties of entities and their relationships to other entities.

The current chapter has analysed the way in which FRBR models each product in a hierarchical mode, using the notions of *work*, *expression*, *manifestation* and *item*. Through a number of practical examples the inferred direct and indirect relationships between the entities have been explained. The responsibility and the subject relationships between the defined entities have also been explained.

The benefit of viewing each product in a fragmented way, rather than packaged as a single object, as happens essentially in ISBD and AACR2, is that user requests can be better served. The utilization of information systems practices to describe the bibliographic data will eventually lead to more intelligent and adaptable retrieval tools.

5.5   Review questions

1 Which are the entities of group 1 of FRBR? Describe them briefly.
2 Describe briefly the entities of group 2 of FRBR.
3 Describe briefly the entities of group 3 of FRBR.
4 Explain the relationship between a work and an expression.
5 What is the difference between an expression and a manifestation? Give an example.
6 What does a many-to-many relationship between an expression and a manifestation mean? Give an example.
7 Why is item defined as a distinct entity from manifestation?
8 Give some examples of attributes for a work. Why is it important to define the attributes of an entity?
9 How do the entities person and corporate body relate to the entities of group 1? Provide some examples.
10 Define the entity concept and give some examples.
11 How do the entities place and event relate to the entities of group 1? Give some examples.
12 Which are the user tasks defined in FRBR?
13 What is the purpose of FRAD and which are the user tasks defined in this model?
14 Discuss some of the benefits of FRBR over other frameworks like ISBD.

5.6   Practical exercises

1 Identify some *work(s)*, *expression(s)*, *manifestation(s)*, *item(s)* for *Pride and Prejudice*.
2 Identify some *work(s)*, *expression(s)*, *manifestation(s)*, *item(s)* for *Trainspotting*.
3 Place the following in the order *work*, *expression(s)*, *manifestation(s)*, *item(s)*:
   a. Paperback copy
   b. Ronald Hayman's playback
   c. Paperback copy autographed by the author
   d. The book published in 1973 by Davis-Poynter
   e. The author's text edited for publication
4 'Benjamin Franklin' is the creator and the subject of quite a few works. Collect some of his works and identify some *expressions*, *manifestations* and *items* existing in your local library.
5 Find in your local library some works which have as a subject the place 'Himalaya Mountains' and identify the relevant expressions, manifestations and items.

5.7   References

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RDA: the new standard for descriptive cataloguing

6

6.1 Introduction

RDA[1] provides a comprehensive set of guidelines and instructions on formulating data to support resource discovery, covering all types of content and media (RDA 0.0). Like AACR2, it consists of a set of instructions and, although RDA aims to be backwards compatible as much as possible, there are notable structural differences between the two standards. For example, AACR2 sees each monographic item as an isolated instance which can be related to another item only by the authorized headings. Relying on FRBR[2] and FRAD,[3] RDA views each item in relation to other items, places and events and as a realization of a more abstract work. Further, the obsession of AACR2 with using abbreviations is not present in the new standard.

The print version of RDA was first published in 2010 and updated in 2013 (RDA, 2013). As RDA was designed for the digital environment, an online tool presenting the RDA content, called the RDA Toolkit,[4] has also been released. The RDA Toolkit is a subscription-based service including the full text of RDA, alternative views of the content, examples and tools that support the transition to RDA. It also provides mappings between AACR2 and RDA and links to other relevant cataloguing resources. Apart from the richer content, the online version is updated more regularly than the print version. The new releases typically contain updates to content and metadata, enhancements to RDA Toolkit functionality and fixes to existing bugs.

The user tasks in RDA are based on the user tasks defined in FRBR and FRAD, i.e. *find*, *identify*, *select*, *obtain*, discussed in the previous chapter of this book. The introductory chapter of RDA presents the purposes, the key features, the relationship to other standards, the alignment with FRBR and FRAD, the structure and the core elements of the standard. The core elements are divided into the attributes for manifestations and items and the attributes of works and expressions. Other issues, such as internationalization and encoding, are introduced in the following sections.

6.2 RDA structure

RDA is structured in 10 sections that cover the attributes of the entities and the relationships between the entities.

- Section 1 (chapters 1–4): recording attributes of manifestation and item.
- Section 2 (chapters 5–7): recording attributes of work and expression.
- Section 3 (chapters 8–11): recording attributes of person, family, and corporate body.

- Section 4 (chapters 12–16): recording attributes of concept, object, event, and place.
- Section 5 (chapter 17): recording primary relationships between work, expression, manifestation, and item.
- Section 6 (chapters 18–22): recording relationships to persons, families, and corporate bodies.
- Section 7 (chapter 23): recording relationships to concepts, objects, events, and places.
- Section 8 (chapters 24–28): recording relationships between works, expressions, manifestations, and items.
- Section 9 (chapters 29–32): recording relationships between persons, families, and corporate bodies.
- Section 10 (chapters 33–37): recording relationships between concepts, objects, events, and places.

The vocabulary emanates from the underlying conceptual models of FRBR and FRAD. Each section consists of a number of chapters detailing the instructions for identifying and recording the elements defined for each entity. Some of the sections deal with bibliographic data (e.g. sections 1 and 2), while others deal with issues that mostly concern authority control (e.g. section 6).

Each chapter consists of a set of instructions, as in AACR2. For instance, chapter 2 of section 1 of RDA concerns the attributes of manifestations and items. Rule 2.2.2 defines the preferred source of information; rules in unit 2.3 concern the titles (i.e. title proper, parallel title proper, other title information etc.); rules 2.4 deal with the statement of responsibility etc. Some of the description areas match to the areas defined in ISBD, while others are new.

In AACR2, rules for different kinds of materials are presented in different chapters and refer back to chapter 1. In RDA, however, all the rules concerning the attributes of manifestations and items are described in chapters 1 and 2, except for the characteristics of the carrier (e.g. audio or video) of the resource, which are described in chapter 3. In this respect, the content and publication details are separated from the physical form of the resource. For example, a resource might be published as a print book and as an electronic book and although the content and the publication details (i.e. publisher, place and date of publication) are regulated by the same instructions, the characteristics of the carriers are different. This is reflected in the bibliographic record by the inclusion of the appropriate carrier descriptor.

RDA includes 12 appendices, numbered A to L, dealing with capitalization, abbreviations, initial articles, titles of nobility, dates, mappings of RDA elements to MARC 21 format and specific designators used in relationships to indicate the specific nature of relationships between entities.

RDA separates the recording of data from the presentation of data, as stated in instruction 0.1. This means that instructions in sections 1 to 10 deal with the identification of the data and their form, rather than their presentation. The main text does not include punctuation instructions for separating the elements, as was the case with the preliminary rules in AACR2. Instead, instructions on the presentation of data are covered in appendices D and E of RDA. Mappings of RDA to MARC 21 fields are provided in appendix D. Some texts on RDA, however, use the AACR2 syntax conventions to present the descriptive data.

6.3 Recording attributes of manifestations and items

An overview of describing manifestations and items in RDA is provided in the next sections. We discuss selected guidelines for recording the attributes of manifestations and items and present specific examples. The main objective is to help the reader understand the transcription process in RDA and compare it with AACR2.

6.3.1 General guidelines

Chapter 1 of RDA provides general guidelines on recording the attributes of manifestations and items. The text lists the core elements (attributes) that should be included, as a minimum, when describing a manifestation or an item. For instance, *title proper*, *statement of responsibility*, *place of publication*, *date of publication*, *identifier* and *carrier type* are some of the core elements for items and manifestations. Elements are grouped into larger areas consisting of core and non-core elements. The *title* area, for example, groups the following elements:

1 Title proper (*core element*)
2 Parallel title proper
3 Other title information
4 Parallel other title information
5 Variant title
6 Earlier title proper
7 Later title proper
8 Key title
9 Abbreviated title.

It should be noted that this is a more structured and transparent approach compared to AACR2, as cataloguers know upfront the elements within each area and the core ones.

Three different ways of describing a resource, namely *comprehensive description*, *analytical description* and *hierarchical description* are defined. A book, an audio file, a serial, a database of digital images, an archive of personal papers, a multipart monograph, an integrating resource should be described using the first alternative. An analytical description should be applied for parts contained within a larger resource. A hierarchical description may be created for resources consisting of two or more parts so as to depict the hierarchical structure of the resource. The resource has to be described, in this case, using the comprehensive description at least and, if needed, using the analytical description as well. The elements to be used in each of the three description methods are defined in subsequent chapters of RDA. In this text we focus on the first description and, more specifically, on comprehensive descriptions of books.

The rest of chapter 1 of RDA deals mainly with issues such as inaccuracies, capitalization, abbreviations, handling of dates and form of numerals. Some of the instructions match those of AACR2, while others suggest new ways for transcribing the data. A probable date should be followed by a question mark, e.g. '[1969?]', as in

AACR2. Misspelled words, however, should be transcribed as they appear on the source and a note should be made if it is considered necessary.

6.3.2 Attribute transcription

Chapter 2 of RDA includes guidelines dealing with the preferred sources of information. As in AACR2, a preferred source of information has to be defined for each resource and then a number of core elements have to be transcribed. For books, the preferred source of information is the title page (RDA 2.2.2.2), for example. For moving images, sources like the title frames or the title screens should be used (RDA 2.2.2.3). If information is taken from a source outside the resource, then the cataloguer has to indicate this fact either by a note or through the use of square brackets (RDA 2.2.4).

In general, the principles and techniques for identifying and transcribing the elements of manifestations and items in RDA are similar to those in AACR2. For each of the description areas, RDA provides a set of instructions and examples to illustrate what information and how it should be transcribed. For example, instructions under unit 2.2 govern the transcription of titles; rules 2.3.2 deal specifically with *title proper*; 2.3.3 with *parallel title proper*; 2.3.4 with *other title information* and so on.

RDA introduces some new elements such as the *preferred citation* (area 2.16), *custodial history of item* (area 2.17) and *immediate source of acquisition of item* (area 2.18). If an object has been bought from some gallery, then the source, the date and the method of this purchase should be recorded. In RDA the elements are typically recorded as they appear on the preferred source of information. The guidelines for capitalization, covered in appendix A of RDA, are roughly the same as in AACR2. Abbreviations are not preferred in RDA.

Examples of elements recorded in RDA

1. **Title on the source:** If I Have to Tell You One More Time. . .
   RDA: If I have to tell you one more time. . .
   AACR2: If I have to tell you one more time —
2. **Edition statement on the source:** second edition
   RDA: Second edition
   AACR2: 2nd ed.
3. **Physical description**
   RDA: xiv, 648 pages
         illustrations, portraits
         24 cm
   AACR2: xiv, 648 p. : ill., ports. ; 24 cm.
4. **Publication, distribution (place, publisher name and date are not known or taken from an external source)**
   RDA: [Place of publication not identified]
         [publisher not identified]
         [2004]
   AACR2: [S.l. : s.n., 2004].

The identifier of a manifestation is an important attribute serving the linking with works and expressions. RDA suggests the application of internationally recognized schemes, e.g. ISBN, ISSN (RDA 2.15), as a *manifestation identifier*. Brief qualifications, such as *cased*, *bound*, *pbk*. (for paperback), *loose-leaf*, may be recorded after the identifier, e.g. 'ISBN 0-435-91660-2 (cased)'.

The *item identifier* (RDA 2.19) is a character string associated with an item. This sequence of characters helps to differentiate one item of a manifestation from the other items of the same manifestation. The accession number, which is a unique number given to each new item that is acquired by a library, could play that role.

6.3.3   Carriers, acquisition and access

Chapter 3 of RDA covers the elements for describing the characteristics of the carrier of the resource. The elements concern the physical characteristics of the carrier and the formatting and the encoding of the information contained in the carrier. The instructions deal with issues such as the *media type* (e.g. audio, microform, video), the *carrier type* (e.g. audio disc, videocassette), the *extent* (e.g. 100 slides, 1 computer disc, 32 pages), the *dimensions* (e.g. 9 x 19 cm, 6 cm in diameter) and more specialized matters such as the *production method*, the *polarity* and the *digital file characteristic*. Some of the elements are marked as core for the resource.

The media type of a single-volume print book is 'unmediated' (RDA 3.2.1.3) and the carrier type is 'volume' (RDA 3.3.1.3). The extent of the text could be transcribed as 'xxvii, 417 pages' (RDA 3.3.1.3) and the dimensions as '27 cm' (RDA 3.5.1.4.14). Some examples of various types of resources can be found in the RDA Toolkit site.[5]

Chapter 4 of RDA presents the instructions for recording the attributes of manifestations and items. They deal primarily with the description of the acquisition and access. *Terms of availability*, *contact information*, *restrictions on access*, *restrictions on use* and *uniform resource locator* are the elements defined in this chapter. Some examples of these elements are:

Terms of availability: $45 ($30 to members)
Contact information: http://www.chandospublishing.com
Restrictions on access: Restricted to institutions with subscription
Restrictions on use: Restricted to classroom use
Uniform resource locator: http://dx.doi.org/10.1002/asi.20648.

Manifestations and items are treated essentially as one entity in RDA, an idea already expressed in FRBR. The description of a manifestation is inherited to the item. Practically, this means only one record. Item identifier (RDA 2.19), item-specific carrier (RDA 3.21) and note on extent and dimensions of item (instructions 3.22.3 and 3.22.5) are a few of the item-specific elements which can serve for differentiating items of the same manifestation.

6.4 Recording attributes of works and expressions

The transcription of attributes for works and expressions is covered in chapters 5–8 of RDA. Chapter 5 is a short text providing general guidelines on recording attributes of works and expressions. The core elements for identifying works and expressions are cited in the chapter. Elements like the *preferred title*, *identifier*, *form* and *date* are necessary for a work. For an expression some of the core elements are the *identifier*, *date* and *language*.

6.4.1 Basic attributes for works and expression

Chapter 6 of RDA provides the guidelines for choosing and recording the preferred titles and other identifying attributes of works and expressions and for constructing authorized and variant access points representing works and expressions. Information about the attributes of works and expressions may be taken from any source, as indicated in RDA (RDA 6.1).

6.4.1.1 Works

The *preferred title* (RDA 6.2.2) of the work is the title or form of title chosen to identify the work. It is equivalent to uniform title specified in AACR2. The guidelines are split into works created after 1500 and earlier works. The preferred title for works created after 1500 is the title in the original language by which the work has become known. Cataloguers may rely on resources embodying the work or on reference sources. The following examples included in the RDA text illustrate the preferred title:

> 'Hamlet'
> is the preferred title for work by Shakespeare first published under the title
> 'The tragicall historie of Hamlet, Prince of Denmarke'
>
> 'Gulliver's travels'
> is the preferred title for work by Swift first published under the title
> 'Travels into several remote nations of the world / by Lemuel Gulliver'

Another attribute is the *variant title for the work* (RDA 6.2.3), which is a title or form of title by which a work is known that differs from the preferred title for the work. A good illustration of variant names for 'The Qur'an' can be found in Library of Congress Authorities.[6] Some variants include 'Al-Coran', 'Al-Qur'an', 'Korani', 'Korano', and 'Curan'.

The *form of a work* (RDA 6.3) and the *date of a work* (RDA 6.4) are two additional core elements. Designators like 'play', 'poem', 'television program' are assigned as the form of a work. The date of a work may be the date it was created or first published or released. The date is usually recorded by giving the year or years associated with the work, e.g. '2002' or '1991-1993'.

The *identifier for the work* (RDA 6.8) is an important core element, as it serves to differentiate that work from other works. It is a character string uniquely associated with a work. Codes like the Library of Congress Control Number (LCCN), the International Standard Musical Work Code (ISWC) or any other established scheme could be used. For example, 'T-345246800-1' is the ISWC code for the song 'I Love Life' (Smith/Jones) and 'n 00020514' is the LCCN for 'The Bible' and 'n 79046204' the LCCN for 'The Qur'an'.

The *content type of the work* (RDA 6.9) is another core element. RDA specifies a list of terms to describe the content type, e.g. 'cartographic image', 'computer dataset', 'computer program', 'spoken word', 'text', 'performed music', 'sounds', 'still work' etc. For instance, a book would be assigned the designator 'text' and a photograph 'still image'.

6.4.1.2 Expressions

The *date of expression* (RDA 6.10), *language of expression* (RDA 6.11) and *identifier for the expression* (RDA 6.13) are core elements for expressions.

The date of expression represents the date it was created, i.e. written, edited, broadcast, recorded etc. Unless a full date is needed, the year or years associated with the expression should be recorded. The language is recorded using the appropriate terms in the language preferred by the agency creating the data. For example, in an English agency the following terms would be used 'English', 'Greek', 'French', 'Italian'. For the same expression in an Italian agency the terms 'Inglese', 'Greco', 'Francece', 'Italiano' would be recorded. If more than one language is involved with a single expression, then all the languages have to be recorded.

The identifier of an expression is a character string uniquely associated with the expression. As in works, established schemes like LCCN or standard numbers used in the National Library of Australia or the Canadian Library and Archives should be used.

The rest of chapter 6 deals with the recording of attributes for legal and religious works and expressions and attributes of official communications. Guidelines for constructing access points to represent works and expressions are also provided.

6.4.2 Describing content

Chapter 7 of RDA provides guidelines on recording the attributes of works and expressions related to the content of the resource. Attributes such as *coverage of the content* (e.g. Based on 1981 statistics), *intended audience* (e.g. For children aged 7–9), *dissertation or thesis information* (e.g. Ph.D.), *illustrative content* (e.g. charts), *colour content* (e.g. chiefly colour), *duration* (e.g. approximately 3 hr.) are some of the elements that are used to describe the content of works and expressions.

6.5 Person, family, corporate body

Chapters 8 to 11 provide the guidelines for identifying and recording the attributes of persons, families and corporate bodies.

A core element for a person is the *name of the person* (RDA element 9.2), which is a word, character or group of words and/or characters by which a person is known. RDA subdivides the name of the person to the *preferred name for the person* and *variant name for the person*. The preferred name of a person is the name by which a person is commonly known, as in AACR2. The preferred name could be the person's real name, pseudonym, nickname, initials or other appellation. The other names or forms of the name by which the person is known and that are not chosen as the preferred name are recorded as variant names. The examples below apply to both RDA and AACR2.

> *Preferred name:* Anthony Gilbert (pen name)
> *Variant name:* Lucy Beatrice Malleson (real name)
> *Preferred name:* John Julius Norwich (real name)
> *Variant name:* 2nd Viscount Norwich (title)

Other elements for a person include the *date of birth* (e.g. 1990 or 1937?), *date of death* (e.g. approximately 1780), *title of the person* (e.g. King of Sweden), *place of birth* (e.g. Agrinion, Greece), *affiliation* (e.g. University of Glasgow. School of Computing Science), etc.

The family entity is defined in the FRAD conceptual model underlying RDA, as explained in the previous chapter of this book. This entity stems from the needs of the archival community. The elements for the entity are defined in chapter 10 of RDA. The chapter includes the instructions for recording elements such as the *preferred* (e.g. Accursius) and *variant* (e.g. Accorsi) names of families, the *dates* and *places* associated with a family, the *hereditary title* (e.g. Duke of Chandos), the *history* of the family in textual form etc.

The guidelines for recording the attributes of corporate bodies are provided in chapter 11 of RDA. Elements like the *name* (e.g. Radio Society of Great Britain), associated *dates*, *language*, *field of activity*, *history*, are defined for corporate bodies.

The above entities are responsible for the content, the physical production, the distribution and the custody of works, expressions, manifestations and items. The elements described in the respective chapters are mainly used for constructing authorized access points. The basis for an authorized access point is the preferred name. The other attributes are used as additions to the preferred name, e.g. 'Smith, John, 1718-1791', 'Pahlavi (Dynasty : 1925-1979)', 'National and Household Food Security Workshop (2003 : Lusaka, Zambia)'.

6.6   Concepts, objects, events, places

The fourth section of RDA deals with concepts, objects, events and places which serve as subjects of works. Chapters 12–15, which concern the general guidelines and the concepts, objects and events, are not yet developed. According to the RDA Toolkit these chapters are placeholders for the relevant content, to be included once it is

approved by the JSC.[7] These entities are, in essence, new, they are not covered in AACR2 and that is why they need further consideration.

However, chapter 16 of RDA is partially developed and includes a set of instructions for the place entity. The main attribute is the *name of the place* (RDA 16.2). The guidelines for the name resemble the rules for establishing headings for geographic names, covered in chapter 23 of AACR2. For example, the name 'Florence' should be used instead of 'Firenze' in an English-speaking agency. If the place is in a state, province, territory etc. of Australia, Canada, the United States or a country that was a constituent republic of the former USSR, then the name of the state etc. in which it is located should be recorded in abbreviated form, e.g. 'Alexandria (Va.)' (instruction 16.2.2.9.2). Analogous instructions govern the transcription of the preferred and the variant names for places.

6.7   Recording relationships

Sections 5 to 10 are devoted to relationships between the various entities, defined in the previous sections. Chapter 17, in section 5 of RDA, covers the recording of the primary relationships, i.e. the relationships between group 1 entities defined in FRBR. A work is realized by one or more expressions, an expression is embodied in one or more manifestations and a manifestation is exemplified by one or more items. These relations are bi-directional with an identical or lower degree of dependency (e.g. one expression realizes only one work but one manifestation may embody one or more than one expression).

Chapters 18 to 37 deal with relationships between the group 1 entities and the entities of the other groups and the relationships between instances of the entities of group 1 (e.g. work-to-work and expression-to-expression relationships). Some of these chapters will be released once their content has been accepted by the JSC.

All the relationships between the entities are recorded by means of one or more of the following techniques:

1 identifier for the work, expression, manifestation, or item
2 authorized access point representing the work or expression
3 composite description.

If the identifiers of the related entities or elements from a work/expression and manifestations/items are recorded in the same record, then the relationships are established. For example, the LCCN of a work could be transcribed with the ISBN of a manifestation to associate the two entities. According to RDA, the relationship between a work and a manifestation embodying that work may be recorded without explicitly identifying the expression through which the work is realized (RDA 17.4.1). This is very useful for (usually new) works expressed in only one form, e.g. a book published only in English in print form.

Authorized access points representing the work or expression can be constructed to associate the various entities defined in FRBR and FRAD. An example in the RDA

text to illustrate this method is 'Qur'an. Spoken word', which is an authorized access point associating the work to a specific expression. It is constructed by adding the content type of the expression to the authorized access point representing the work. 'Qur'an' is the preferred name for the work and 'Spoken word' is the content type for the expression. Another example from RDA is 'Ocean's eleven (Motion picture : 2001)' which relates the work 'Ocean's eleven' to the manifestation 'Motion picture : 2001'.

6.8 An RDA record for a book

The preceding sections have presented selected attributes for describing works, expressions, manifestations and items. To describe a book a cataloguer has to consult at least chapters 1–4 of RDA's section 1 for manifestations and items and chapters 5–7 of section 2 for works and expressions. The transcription of persons, places, objects etc. is handled in sections 3 and 4 and the recording of relationships is governed by the instructions of sections 5–10. Cataloguers should also consult some appendices to assign the appropriate designators.

The book in the following example is part of the 'Open and Flexible Learning Series', the pages are numbered i–xvii and 1–263, its height is 24 cm and it includes index and bibliographic references.

Title page	Data on title page verso
Contemporary Perspectives in E-learning Research	First published 2007 by Routledge
Themes, methods and impact on practice	
Edited by Gráinne Conole and Martin Oliver	ISBN10: 0-415-39393-0 (hbk) ISBN10: 0-415-39394-9 (pbk) ISBN10: 0-203-96626-0 (ebk)
Routledge Taylor & Francis Group LONDON AND NEW YORK	

Table 6.1 provides the attributes of the book as recorded in RDA. The book is published as an ebook, in paperback and in hardback. These are considered as different manifestations of the same expression of the work and thus their identifiers have to be recorded. The identifier of the item is devised for the purposes of the current example and is meant to be illustrative only. We also indicate that the work is for researchers and students in the e-learning area.

If we assume that a specific copy of the book in a library is missing the bibliographic references, for instance, then, based on RDA instruction *3.21 item-specific carrier characteristic*, a phrase like 'Library's copy lacks bibliographic references' should be recorded.

Table 6.1 Example of book attributes recorded in RDA

RDA instruction	RDA element	Data recorded
2.3.2	Title proper	Contemporary perspectives in e-learning research
2.3.4	Other title information	themes, methods and impact on practice
2.4.2	Statement of responsibility relating to title proper	edited by Gráinne Conole and Martin Oliver
2.8.2	Place of publication	London
2.8.2	Place of publication	New York
2.8.4	Publisher's name	Routledge
2.8.6	Date of publication	2007
2.12.2	Title proper of series	Open and Flexible Learning Series
2.13	Mode of issuance	single unit
2.15	Identifier for the manifestation	ISBN 0-415-39393-0 (hbk)
2.15	Identifier for the manifestation	ISBN 0-415-39394-9 (pbk)
2.15	Identifier for the manifestation	ISBN 0-203-96626-0 (ebk)
2.19	Identifier for the item	2008: 005
3.2	Media type	unmediated
3.3	Carrier type	volume
3.4	Extent of text	xvii, 263 pages
3.5	Dimensions	24 cm
4.3	Contact information	Routledge, 2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN
4.3	Contact information	270 Madison Avenue, New York, NY 10016
6.4	Date of work	2007
6.9	Content type	text
7.7	Intended audience	Researchers and university students with an interest in e-learning
7.12	Language of the content	English
7.16	Supplementary content	Includes bibliographical references and index
19.2	Creator	Conole, Gráinne
18.5	Relationship designator	editor of compilation
19.2	Creator	Oliver, Martin
18.5	Relationship designator	editor of compilation
25.1	Related work	Open and Flexible Learning Series
24.5	Relationship designator	in series (work)

6.9   Outline of the descriptive cataloguing process in RDA

The following list enumerates the steps for describing a single-volume book using RDA. We assume that the book belongs to a series. Steps 1 to 5 deal with the group 1 entities of FRBR. The next steps relate to the relationships between the basic entities.

1 Identify attributes of manifestation and item
   - Title (RDA 2.3)
   - Statement of responsibility relating to title proper (RDA 2.4)
   - Edition statement (RDA 2.5)
   - Publication statement (RDA 2.8)
   - Series statement (RDA 2.12)
   - Mode of issuance (RDA 2.13)
   - Identifier for the manifestation (RDA 2.15)
   - Note on manifestation or item (RDA 2.20)

2 Describe carrier
   - Media type (RDA 3.2)
   - Carrier type (RDA 3.2)
   - Extent of text (RDA 3.4.5)
   - Dimension for volume (RDA 3.5.1.4.14)

3 Describe acquisition and access information
   - Terms of availability (RDA 4.2)
   - Contact information (RDA 4.3)

4 Identify attributes of work and expression
   - Title of the work (RDA 6.2)
   - Form of the work (RDA 6.3)
   - Date of the work (RDA 6.4)
   - Identifier for the work (RDA 6.8)
   - Content type (RDA 6.9)
   - Date of expression (RDA 6.10)
   - Language of expression (RDA 6.11)
   - Identifier for the expression (RDA 6.10)

5 Describe content
   - Intended audience (RDA 7.7)
   - Language of content (RDA 7.12)
   - Illustrative content (RDA 7.15)
   - Supplementary content (RDA 7.16)
   - Colour content (RDA 7.17)

6 Record primary relationships between work, expression, manifestation, item
   - Work manifested (RDA 17.8)
   - Expression manifested (RDA 17.10)

7 Record relationships to persons, families, corporate bodies
   - Creator (RDA 19.2)
   - Relationship designator RDA 18.5

The above list would need to be expanded for more complicated resources, for instance, when there are additional contributors (e.g. translator) or notable differences between copies exemplifying the same manifestation. Nevertheless, it provides an initial roadmap for cataloguing books in RDA. In of this book we discuss the encoding of RDA data in MARC format.

6.10   RDA Toolkit

The burden of immersing oneself in RDA is significantly reduced by using the RDA Toolkit. It is a tabbed web tool that includes searchable and browsable RDA instructions, several different views of the instructions and tools and mappings
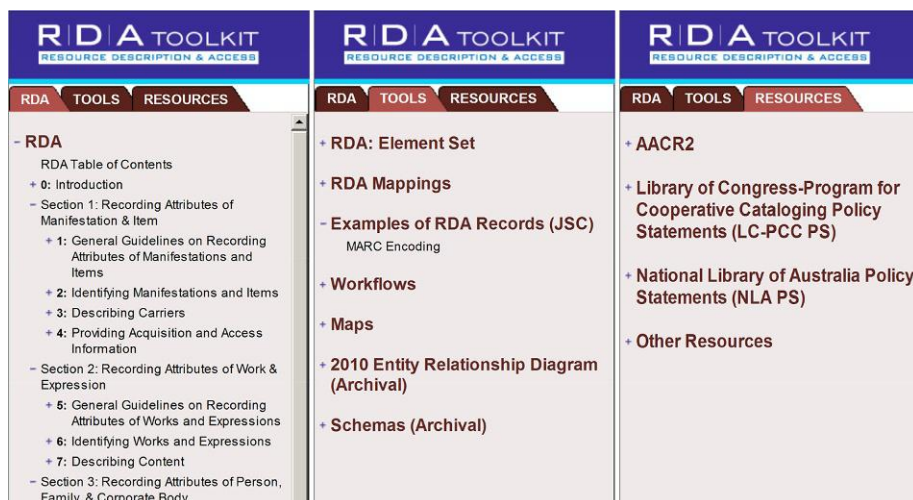
Figure 6.1 The tabs of the RDA Toolkit (http://access.rdatoolkit.org/)

to assist in migration to the standard (Figure 6.1). The full text of RDA is available through the RDA tab. The hyperlinked version of the table of contents allows direct navigation to the required instructions. In this view the contents can be filtered to show only the core elements or the basic instructions or to hide examples and bookmarks.

The second tab, Tools, provides examples and mappings to MARC 21 biblio-graphic elements and to MODS[8] (Metadata Object Description Schema) elements. Further, the elements may be viewed as grouped per FRBR and FRAD entities, through the 'RDA Element Set' options. Workflow is an important tool providing step-by-step arrangements for accomplishing specific tasks. Workflows are custom-izable to fit to the needs of the subscriber.

The last tab, Resources, includes links to AACR2 and other related resources. The full text of AACR2 is available through this tab. A hyperlink appears next to an AACR2 rule when there is an equivalent or close RDA instruction, and leads to the respective RDA instruction.

6.11   Summary

The above descriptive presentation has focused on the basic steps of cataloguing with RDA. For each resource, the manifestation and item have to be described, using instructions that resemble the AACR2 rules. Works and expressions are defined by recording values for specific attributes such as the preferred name and the identifier. Other entities such as person, concept, place etc. may be detailed during the process. To complete the task, the cataloguer has to record the relationships between the dis-tinct entities representing the resource.

RDA is a new cataloguing standard with text extending to a thousand pages in print form which, obviously, cannot be analysed in a single chapter. The process may at first seem more demanding than in AACR2 but you should bear in mind that the abovementioned steps concern both the description of the physical and intellectual aspects of the resource and, to use the AACR2 terminology, the access points and headings. In addition to the inherent complexity of the lengthy technical specification, not many real cases are available of the standard in use, although some libraries have started updating their electronic records. The examples contained in the text or found dispersed on the Web, although illustrative, are limited in scope. The examples given in different chapters are unconnected, which increases the effort required by cataloguers to understand the overall process. RDA Toolkit, however, offers definite advantages for speeding up the transition from the older standard to the new one. This online service provides filtered views of the content, mappings of the elements to the MARC 21 encoding format and hyperlinks from the AACR2 elements to RDA attributes.

To conclude this chapter, it can be argued that some issues, such as the adoption of the new MARC 21 tags for certain RDA elements in computerized catalogues,[9] the generation of step-by-step examples for different kinds of material and the development of all the content of the standard, have to be resolved before the standard is fully accepted.

6.12   Review questions

1 Describe briefly the structure of RDA.
2 What would you use as an identifier for a manifestation and what for an item? Assume that the item is a single-volume book.
3 What are the carrier type and media type for single-volume book?
4 Describe the main attributes of works. Provide some examples of each.
5 What are the preferred name and the variant name for a person? Provide an example.
6 What techniques are used to record the entity relationships in RDA?
7 What is the RDA Toolkit? Describe some of its features.
8 Describe briefly the steps for cataloguing a book in RDA.

6.13   Practical exercises

1 Visit www.rdatoolkit.org and review the RDA table of contents.
2 Select a book from your personal collection or from your local library and identify the attributes of the work, expression, manifestation and item. Use as a guide the example in this chapter and the examples in the RDA Toolkit website.[5]

6.14   References

RDA (2013). *Resource description and access print.* Chicago: American Library Association.

6.15   Webliography

1. Overview of RDA, http://www.rda-jsc.org/rda.html.
2. Latest report on FRBR, http://www.ifla.org/VII/s13/frbr/frbr.htm.
3. Latest report on FRAD, http://www.ifla.org/publications/functional-requirements-for-authority-data.
4. RDA Toolkit, http://www.rdatoolkit.org.
5. MARC Record Examples of RDA Cataloging, http://www.rdatoolkit.org/examples/MARC.
6. Variant names for Qur'an, http://lccn.loc.gov/n79046204.
7. Joint Steering Committee for Development of RDA, http://www.rda-jsc.org/.
8. MODS official site, http://www.loc.gov/standards/mods/.
9. MARC 21 updates for use with RDA, http://www.loc.gov/marc/RDAinMARC.html.

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Classification

7

7.1 Introduction

Classification is the process of arranging objects in groups, based on one or more of their properties. The main purpose of classification is to bring together like objects to achieve some goal, e.g. to study them. For example, animals could be classified based on their primary moving capability, i.e. fly, walk, slither, swim, etc. Other arrangements, e.g. grouping them according to their eating habits, might better serve another purpose. There is thus no best way to classify the same group of things. This is true for library holdings as well, as we will discuss later.

Classification involves some basic principles (Broughton, 2004). *Grouping* is the first step of classification, aimed at bringing together related items, based on some of their properties. *Ordering* involves the logical arrangement of items within a class. For resources with a well-defined subject, e.g. *Qualitative Educational Research*, these two principles are relatively easy to apply. A resource dealing with *compound subjects*, such as the book *Themes in Macroeconomic History: The UK Economy 1919–1939*, could be grouped with books about history or with books on macroeconomics, or even with books dealing with social issues, as the period covered in the volume includes the Great Depression, with its negative implications for society. The focus of the following sections is on library classification principles and schemes.

7.2 Library classification

Library classification is the process of arranging the resources of a library in a logical order, from the general to the specific, based on the main subject of a resource. The fundamental purpose of this process is to facilitate the retrieval of the required information, i.e. to lead the user to the required book or map or other type of resource. Resources on the same topics are shelved collectively. As a result, books about wide-area networks, for instance, are shelved in the same place. Books about local-area networks are positioned close to them. The result of the classification process is the assignment of a numeric or alphanumeric code which represents the subject of the classified object in a specific classification scheme. For example, the code 025.4 denotes the topic 'Subject analysis and control' in the Dewey Decimal Classification (DDC) system.

Classification is part of *subject analysis* (or *subject cataloguing*), which deals with the content of items. The assignment of subject headings, i.e. terms from a controlled vocabulary, is another dimension of the subject analysis. Subject headings are discussed in a later chapter.

7.2.1 Some historical notes

The roots of classification can be traced back to ancient Greece and Aristotle's classical theory of categories (Aristotle, 1995) and the catalogue compiled by the poet Callimachus for the library of Alexandria, which arranged the entries into at least 10 main classes (Witty, 1958; Taylor, 2006, chapter 9).

It was the work of Francis Bacon (1561–1626), however, which influenced some of the most widespread classification schemes, like the DDC system. Well-known classifiers, among of whom was Thomas Jefferson, were also influenced by Bacon's work. Bacon studied the universe of knowledge and organized the scheme of knowledge classification.[1] He divided the universe of ideas into three successive groups, namely *history*, *poesy* and *philosophy*. Bacon stated in his work that 'The parts of human learning have reference to the three parts of man's understanding, which is the seat of learning: history to his memory, poesy to his imagination, and philosophy to his reason.' The History group includes Geography and History. The second group includes Arts and Literature, while Philosophy includes the remaining subjects. This system is known as the Baconian system.

Melvil Dewey developed the DDC scheme between 1873 and 1876. The first edition of the classification scheme was published anonymously in 1876 under the title *Classification and Subject Index for Cataloguing and Arranging the Books and Pamphlets of a Library*. The Library of Congress Classification (LCC) system was developed in 1897, when the LC collection had grown significantly. Other systems, like the Cutter Expansive Classification system, the Bliss Bibliographic Classification (BC), the Colon Classification (CC) and the Universal Decimal Classification (UDC) also appeared at the end of the nineteenth century, or later during the first decades of the twentieth century. Some of them were originally based on another system. For example, UDC was based on DDC and the Cutter Expansive Classification was the basis for the top categories of LCC. DDC and LCC are presently the most popular schemes. Some of the other systems continue to evolve and certain of their novel features are integrated into the popular schemes.

7.2.2 Localized or discipline-oriented schemes

In addition to the above universal classification systems, certain localized or discipline-oriented schemes have been developed. A few of these are cited below.

- Nippon Decimal Classification (NDC) for Chinese- and Japanese-language books is maintained by the Japan Library Association.[2]
- Chinese Library Classification (CLC), also known as Classification for Chinese Libraries (CCL), is the national library classification scheme in China. CLC is modelled on LCC and includes unique categories such as 'Marxism, Leninism, Maoism & Deng Xiaoping Theory'.[3]
- Korean Decimal Classification (KDC) is used in Korea and is a re-ordered derivative of DDC.[4]
- Library-Bibliographic Classification (BBK) is applied in Russian libraries.[5]
- Elazar Classification System is a classification system for libraries of Judaica.[6]
- Hicks and Schiller Classification Systems are two schemes specifically for law books.[7]

- The National Library of Medicine (NLM) classification system is a library indexing system covering the fields of medicine and preclinical basic sciences.[8]
- The Superintendent of Documents (SuDocs) classification scheme is developed by the US Superintendent of Documents for the arrangement of federal government publications.[9]
- United Nations Documents Classification numbers, known as 'symbols', are composed of letters and numerals separated by slashes for the documents issued by that organization.[10]
- The Alpha-Numeric System for Classification of Recordings (ANSCR) is used for organizing sound recordings.[11]

In addition to the above systems, the full or abridged versions of DDC and LCC have been translated and applied in many different human languages. For example, Dewey has been translated into more than 30 languages.[12]

7.2.3 Classification steps

Libraries – public, research or private – decide on the classification system they will use and follow a series of steps to organize their books. Most libraries support direct access by their patrons to the shelves for retrieving the required items. This practice is referred as *open access* or *open stacks*. The organization of the works in a formal, systematic and comprehensible method is essential to this approach. In *closed access* or *closed stacks* systems, where books are accessible only to library employees, who bring the requested item(s) to the users, the systematic organization is less challenging. Classification of books can be simplified into the following steps

1 Decide what the book is about, i.e. identify the main subject of the book.
This first step is probably the most demanding and most stressful of the process. The *aboutness* of a book, i.e. deciding its main subject, is a complex process. It is difficult to determine uniquely the main subject of a book in a discipline of which a classifier has, possibly, limited knowledge, as no one is expected to be knowledgeable in a variety of disciplines. Even if someone holds a degree in the subject area, the advances in scientific fields, the broadness of the subjects and the depth of specific topics make it impossible for someone to have a thorough understanding of the entire discipline. The problem is further intensified by compound-subject resources, which are commonly present in libraries. To decide on the main topic, the classifier relies on the title, the foreword, the table of contents and text of the book, the experience of the classifier, possible external reviews and so on.

2 Match this subject to a class in the applied classification system.
Popular classification systems like the DDC and the LCC provide a top-level list of broad classes covering different disciplines. These classes are further divided to divisions, sections etc. For example, the class 'Science' in DDC contains 'Mathematics', 'Astronomy', 'Physics', 'Chemistry' and five more divisions. These divisions are further split. The classifier has to explore the class and division that most closely correspond to the subject specified for the book. This means that a thorough understanding of the conceptual framework of the classification scheme is needed. For example, if the book is about 'mathematics' and more specifically about 'linear algebra', then the class 'Science' of the DDC system should be navigated so as to determine the most appropriate subclass.

Depending on the classification scheme and the techniques it embodies, this step may also involve the identification of the space (i.e. place) and the time (i.e. period) associated with the subject of the item, and the form (e.g. dictionary) of the resource.

Another factor that influences this step is the choice between *close* and *broad* classification. Close classification means classifying each work as specifically as possible, using all available subdivisions. In broad classification, works are listed in broad categories, i.e. under the main divisions and subdivisions, even when more specific concepts are available for a class. For example, in broad classification using DDC, a book about 'Psychology' would be placed under the main class 'Philosophy and psychology' or its first-level division, 'Psychology', while in close classification a more specific subdivision like 'Emotions and feelings' or 'Hypnotism' would be applied. Close classification is essential in large libraries with many holdings on related subjects, while broad classification is most appropriate for general libraries with a limited number of books per discipline.

3 A class number is assigned to the book.

The *class number* (or *classmark*) depends on the notation of the applied classification scheme. For example, 154.7 is the class number for 'Hypnotism' in Dewey. QH 541.15. C44 is the class number for 'Chemical ecology' in LCC.

4 Finally, a call number, emerging from the class number, is allocated to the book for shelving purposes.

The DDC class number for a book on 'Linear algebra' is 512.5. The *call number,* also referred to as *call mark* or *shelfmark,* assigned to a book by an author named Terry Lawson could be '512.5 LAW'. Similarly, for a book on the same topic by the author Bill Jacob, the call number might be '512.5 JAC'. The call number is constructed using the class number followed by a set of letters, numerals and symbols, either in combination or alone. These characters may be extracted from the author's surname or constructed using more sophisticated techniques, as will be discussed in the following chapters. The call number could also contain other data, such as the date, the volume number, the copy number and the location symbol.

The classification is heavily influenced by the decision as to what the book is predominantly about. This is one of the most difficult decisions to be made by the classifier and is a competence that is difficult to instruct (Broughton, 2004 p. 53). The 'aboutness' of a resource is even more difficult to determine in non-book materials (Svenonius, 1994). The classification approach depends, in addition, on the size of the library's collection and on the nature of the library. Large libraries tend to resort to close classification, and books about the 'History of economics', for example, are handled differently in the library of a history department than in the library of an economics department.

7.2.4   Looking for information to decide on the main subject(s)

The classifier has to use some parts of the item to determine the subject of the book. The parts of the book that could serve this purpose are:

- *Title and subtitle*: in technical books, like the one you are reading now, the title probably helps you understand the subject of the book. However, this is difficult, if not impossible, for the book titled *How to Read and Why*, which should classified under a subclass of

literature, based on its content. Subtitles are sometimes more informative. For instance, in the book *The Moral Laboratory: Experiments Examining the Effects of Reading Literature on Social Perception and Moral Self-concept*, the subtitle (i.e. the part after the colon) is quite informative.

- *Contents*: the contents page lists the topics of the book and therefore is a good source of information that can significantly help the classifier. This is not always the case, though. For instance, in collections of scientific papers the titles of the individual articles may vary substantially, and therefore the contents page may be confusing.
- *Foreword, introduction or other notes from the author*: usually the aim of a book is clarified in these parts and the main subjects of the book are emphasized.
- *External sources*: the classifier should utilize external sources (e.g. reference sources, records from cooperative services) in case the above parts are confusing, or if the subject of the book is too technical to be defined accurately.

It should be noted that the last three items in the above list can also serve to determine the subject headings, which is another step of subject analysis.

7.3   Types of classification systems

The cataloguing schemes mentioned above have evolved since their conception, and some of their initially unique organizational characteristics are now shared among the schemes. Nevertheless, their underlying principles still characterize each standard to a significant degree and allow the sorting of the schemes into *hierarchical*, *enumerative* and *synthetic* (*faceted* and *analytico-synthetic*) arrangements.

7.3.1   Hierarchical

In hierarchical classification subjects are arranged hierarchically, from the most general to the most specific. In this structure successive steps of division create smaller and more specific classes. Figure 7.1 shows a hierarchy which is commonly used to depict hierarchical arrangement. This structure appears to be intuitive and logical to most people,

```
Kingdom
   Phylum
      Class
         Order
            Family
               Genus
                  Species
```

Figure 7.1 A hierarchical structure

as we tend to order things from the general to the most specific. However, it is not easy to maintain such a hierarchy as the field of knowledge is constantly reformed, new concepts are added, old concepts are divided and so on. More importantly, we cannot model the whole universe of knowledge in such a one-dimensional approach, as subjects are usually composite and more complex than the example in Figure 7.1.

7.3.2 Enumerative

An enumerative structure is an alphabetical listing of subject headings with numbers assigned to each heading. Enumerative classification attempts to list (enumerate) all the required single and composite subject concepts. Figure 7.2 is an excerpt from

---

Class N – Fine Arts

   N – Visual arts

      N1-58   General

      N61-72   Theory. Philosophy. Aesthetics of the visual arts

      N81-390   Study and teaching. Research

      N400-3990 Art museums, galleries, etc.

      N4390-5098 Exhibitions

      …

   NA – Architecture

      NA1-60   General

      NA100-130   Architecture and the state

      NA190-1555.5 History

      NA1995   Architecture as a profession

      …

   NB – Sculpture

   NC – Drawing. Design. Illustration

   ND – Painting

   NE – Print media

   NK – Decorative arts

   NX – Arts in general

Figure 7.2 An enumerative structure extracted from LCC

class N of LCC showing a few of the subclasses and the divisions of the class. Enumerative structures are also referred to as *top-down classifications* because they start from the whole universe, and through repetitive divisions reach more specific concepts. The difference between an enumerative structure and a hierarchical structure is that the enumerative approach contains composite concepts which disrupt the arrangement from 'general to specific'.

For classifying a resource in a purely enumerative system, the classifier has to discover the predefined subclass that best matches the 'aboutness' of the item. For compound-subject items this is a concern because there is a high possibility that no perfectly matching division exists. Another problem is that the subclasses are lengthy, containing composite and complex subjects with certain terms recurring often in different divisions. LCC is a distinctive paradigm of enumerative system with limited characteristics of a hierarchical arrangement. DCC is also an enumerative system, but with more hierarchical features.

7.3.3   Synthetic

Synthetic classifications do not attempt to enumerate classes for every composite or simple concept. Instead, they provide mechanisms to construct classes for composite concepts by combining simpler concepts or even other classes of compound concepts. There are two expressions of this approach, the *faceted* and the *analytico-synthetic*. Some works on classification differentiate between these alternatives (e.g. Broughton, 2004), while others, especially American works, make no such distinction and use only the term 'faceted' (e.g. Taylor, 2006).

7.3.3.1   Faceted

In *faceted* classification (also called faceted analysis), instead of repeating some concepts, e.g. place, in different classes, it is preferable to list these commonly occurring concepts separately and build the class number by combining the main subject with the recurring concepts. The *facets*, as they are called, are single concepts expressing places, time, physical form, etc. So, instead of providing class numbers for composite concepts like 'Economic history of the USA', 'Economic history of the UK' and 'Economic history of China', a single concept 'Economic history' could be established and joined with the appropriate facet expressing the place, i.e. 'USA' or 'UK' or 'China', to denote the composite subject of the resource. This approach results in shorter classes, as compared to enumerative schemes, as the facets can be reused in conjunction with other simple concepts.

Facet analysis was introduced between 1920 and 1930 by the Indian librarian S.R. Ranganathan and formalized in his *Colon Classification* system (2006). The idea of facets loosely existed already in other schemes. For example, DDC used, and still does use, certain numbers for specific concepts which are appended to any other

subject number to form a larger and more specific number. Ranganathan identified five basic facets, collectively known as *PMEST*:

- *Personality (P):* main subject of the resource
- *Matter (M):* substances, materials, constituents
- *Energy (E):* actions, activities, processes involved
- *Space (S):* place related to the resource
- *Time (T):* period of time.

Psychology	*main subject*
Adults	*personality*
Emotions	*matter*
USA	*space*
20th century	*time*

Figure 7.3 Faceted classification example

These five facets are combined with the main subject to provide the call number. Figure 7.3 shows the facets that can be identified for the book *A Study of the Emotions of Adults in the 20th Century*. The facets are based on an analysis of the book and on the specific classes and tables of the CC system, which is reviewed later in the chapter.

7.3.3.2   Analytico-synthetic

In *analytico-synthetic* classification, as in faceted classification, a class is made up of different constituents. They concern the main subject or subjects of the item to be classified, the place, the language, the form of the work, the period of time and a few other characteristics. The information for building the classes is contained into two types of tables. The main tables or main schedules contain the various disciplines and branches of knowledge and the auxiliary tables contain facets of concepts representing general, recurrent characteristics. The final class is created by joining together one or more classes of the available tables. The idea of analytico-synthetic classification is embodied in the UDC scheme.

   In essence, faceted classification is a more structured realization of the analytico-synthetic type. In analytico-synthetic classification a compound subject is deconstructed (*analysis*) to simpler concepts and reconstructed (*synthesis*) to create the classmark by joining the appropriate classes of the main and auxiliary tables. This is a more generic and less disciplined approach, as compared to faceted analysis, where the generic facets are recurrent concepts common to virtually all subjects. Each class is subdivided based on the recognized facets.

7.4   Main classification systems

In the previous section we discussed the organizational types of classification systems. Most of the systems adhere mainly to one type but adopt in addition some characteristics of the other forms. The most common classification systems, LCC and DDC, are essentially enumerative. However, DDC exhibits some hierarchical and faceted features. LCC does too, but to a lesser extent. The CC of Ranganathan is the first genuine faceted system. UDC is an analytico-synthetic system.

On a practical level, the various classification schemes share the following features:

- *Schedules*: the part of the classification scheme that lists the classes, the divisions, etc. of the scheme. Schedules consist of the class *headings* or *captions* (e.g. Surgical pathology), the *notation* (e.g. RD57) and some instructions (e.g. Classify here works on general ecology and general animal ecology).
  In enumerative schemes the schedules are detailed and lengthy, while in synthetic schemes they are shorter, containing only broad classes. For instance, the LCC schedules are much lengthier than the DDC schedules, since LCC lists more of its numbers, while in DDC it is possible to build some numbers.
- *Notation*: a series of symbols used to represent the classes in the scheme and eventually the appropriate call numbers (e.g. 'RD57' and 'QA 76.73 J38 FS66 2007' in LCC, '953.6' and '005.133 ECK' in DDC, 'L,45;421:6;253:f.44'N5' in CC). Notation is used to indicate a subject, to show its relationship to a class and to maintain the order of the items on the shelf.
- *Index*: the alphabetical list of the class headings used in the schedules, together with the corresponding notation. It provides a means of quick access to the classes of the scheme. The index can be either *specific* or *relative*. In the first type there is only one entry for each topic mentioned in the schedules. A relative index shows the connection between subjects and the disciplines in which they appear (Figure 7.4). Essentially, under each subject the disciplines which treat that subject are sub-arranged alphabetically. A relative index also enumerates the synonyms, establishing in this way the relations between the topics and the relation of each topic to all the disciplines in which it is found.

In addition to the schedules some systems include *auxiliary tables*, which are used to build more specific numbers than the ones listed in the schedules. For instance, one of the DDC tables is 'Standard Subdivisions'. The numbers included in this table, e.g. '03 Dictionaries, encyclopedias, concordances', can be appended to a class number to indicate that the resource is a dictionary or an encyclopedia on a specific subject.

Schemes are revised regularly, especially the most widely used ones like DDC and LCC. The latest edition of Dewey was issued in 2011. This is the 23rd edition since it was first devised by Melvil Dewey in 1876. An abridged version of Dewey, entitled 'Abridged 15', was published in early 2012. The revisions of LCC are published online as they are accepted.

DDC and LCC are detailed in the next two chapters. However, the following sections provide an outline of their main characteristics. A summary of the features of UDC, the CC and the Bliss Bibliographic Classification (BC) is also given. The

Air transportation	387.7
engineering	629.13
international law	341.756 7
law	343.097
public administration	351.877 7
transportation services	387.7
Air transportation facilities	387.736 2
engineering	629.136
see also Airports	

Figure 7.4 A part of Dewey relative index

purpose of the following sections is to help the reader develop a high-level under-
standing of the individualities of each scheme and the similarities among them.

7.4.1 Dewey Decimal Classification

Dewey is a hierarchical and enumerative scheme with some faceted aspects. The basic
arrangement of Dewey is by discipline. It includes ten main *classes* (Figure 7.5), which
are further divided and progress from the general to the specific. Each class is divided

000	Computer science, information & general works
100	Philosophy & psychology
200	Religion
300	Social sciences
400	Language
500	Science
600	Technology
700	Arts & recreation
800	Literature
900	History & geography

Figure 7.5 The ten main classes of Dewey

into ten *divisions* (the hundred divisions) which represent a part of the discipline (see Figure 7.6 for an example). The hundred divisions are further divided into the thousand *sections* (see Figure 7.7 for an example). The three summaries, i.e. the main classes, the divisions and the sections cover 1,000 subjects numbered from 000 to 999.

The numbers are further expanded by inserting a decimal point after the third number to create subdivisions for more specific subjects, hence the characterization 'Decimal' in the name of the scheme (Figure 7.8). The main classes and their subdivisions form the schedules of the specification.

000	Computer science, knowledge & systems
010	Bibliographies
020	Library & information sciences
030	Encyclopedias & books of facts
040	[Unassigned]
050	Magazines, journals & serials
060	Associations, organizations & museums
070	News media, journalism & publishing
080	Quotations
090	Manuscripts & rare books

Figure 7.6 The hundred divisions of the '000' Dewey class

020	Library and information sciences
021	Relationships of libraries, archives, information centers
022	Administration of physical plant
023	Personnel management (Human resource management)
025	Operations of libraries, archives, information centers
026	Libraries, archives, information centers devoted to specific subjects
027	General libraries, archives, information centers
028	Reading and use of other information media
029	[Unassigned]

Figure 7.7 The thousand sections of the '020' Dewey division

000	Computer science, information & general works	
020	Library & information sciences	
	025	Operations of libraries, archives, information centers
	025.1	Administration
	025.2	Acquisitions and collection development
	025.3	Bibliographic analysis and control
	025.4	Subject analysis and control
	025.5	Services for users
	025.6	Circulation services
	025.7	Physical preparation for storage and use
	025.8	Maintenance and preservation of collections

Figure 7.8 Excerpt of the 000 decimal subdivisions of DDC

The notation in DDC is purely numerical. Thus, 551.2 is the number for 'Volcanoes, earthquakes, thermal waters and gases' and 551.22 for 'Earthquakes'. To classify a book with DDC the classifier has to locate the most appropriate subdivision and assign the sequence of Arabic numbers to the book. This number is the basis of the call number. The process of building a call number in Dewey is discussed in the next chapter, which details the scheme. Dewey includes auxiliary tables to build more specific numbers that convey the form (e.g. serial publication), geographic information, the type of literature etc. of the resource. This approach implements the faceted capabilities of the scheme. However, the decision to build more specific numbers or to use the narrower classes of the schedules depends on whether close or broad classification is applied. The full version of DDC is published in four volumes and on the WebDewey service.[13]

7.4.2 Library of Congress Classification

The LCC was first developed at the end of the nineteenth century for the LC, as it was decided that the previous system was no longer adequate for the collection of almost one million volumes. It was devised by James C.M. Hanson and implemented by Charles Martel.[14] LCC is a (mainly) enumerative system.

The system divides all knowledge into 21 basic classes. Each class is identified by a single letter of the alphabet[15] (Figure 7.9). Every class is further analysed, (see Figure 7.10) but not necessarily to more specific concepts; thus the scheme exhibits limited hierarchical features. The notation in LCC is mixed, meaning that subclass numbers consist of capital letters and Arabic numbers and are occasionally

A General Works

B Philosophy, Psychology, and Religion

C Auxiliary Sciences of History

D General and Old World History

E-F History of the Americas

G Geography, Anthropology, and Recreation

H Social Sciences

J Political Science

K Law

L Education

M Music

N Fine Arts

P Language and Literature

Q Science

R Medicine

S Agriculture

T Technology

U Military Science

V Naval Science

Z Bibliography, Library Science, and General Information Resources

Figure 7.9 The main classes of LCC

punctuated by a dot, e.g. the number for 'Earthquakes, Seismology - General Works - 1970 to Present' is QE534.2.

LCC is updated at irregular short intervals and the lists of additions and changes are posted online as they are approved.[16] The schedules are available in 41 printed volumes and online at Classification Web.[17] LCC is detailed in Chapter 9.

7.4.3   Colon Classification

CC was the first completely faceted system. It was devised by Dr Shiyali Ramamrita Ranganathan in 1933 and since then six further editions have been published (2006). Its name comes from the use of colons to separate facets in class numbers. The five

N	Visual arts
NA	Architecture
NB	Sculpture
NC	Drawing. Design. Illustration
ND	Painting
	25-3416 Painting
	25-(48) General
	49-813 History
	1115-1120 Study and teaching
	1130-1156 General works
	1288-1460 Special subjects

Figure 7.10 Part of the divisions of the class N

, (comma) = Personality
; (semi-colon) = Matter
: (colon) = Energy
. (period) = Space
' (apostrophe) = Time

Figure 7.11 Punctuation used in CC

types of facets *Personality, Matter, Energy, Space, Time*, are associated with different punctuation. The punctuation indicates what type of facet should follow (Figure 7.11).

The basic idea behind Ranganathan's proposal was that each concept could be built by starting at a very broad class level and then adding terms that correspond to facets of that basic class, to arrive at the very specific topic. The class number is formed by beginning with a basic class number and adding as many facets to this number as the cataloguer needs. The initiating class number is referred to as the *basic subject* or the *basic facet* (Figure 7.12). The additional facets are known as *isolates* (Figure 7.13).[18] A basic subject can stand alone, for example, 'literature' in the subject 'English literature'. An isolate, in contrast, is a term that mediates a basic subject, such as the term 'English.'

A common example of CC is 'Research in the cure of the tuberculosis of lungs by x-ray conducted in India in 1950s'. The resulting class number is

z Generalia

1 Universe of Knowledge

2 Library Science

3 Book science

4 Journalism

B Mathematics

C Physics

D Engineering

E Chemistry

F Technology

G Biology

H Geology

Figure 7.12 Part of the basic classes of CC

'M 1800 to 1899

'N 1900 to 1999

'N5 1950s

'P 2000 to 2099

Figure 7.13 Part of the time isolates of CC

   L,45;421:6;253:f.44′N5

If we replace the numbers with class titles and terms corresponding to facets the result is:

   Medicine,Lungs;Tuberculosis:Treatment;X-ray:Research.India′1950

The number of basic classes was smaller to begin with, but was expanded to 46 in the 1960 edition. The letters and numbers used in each area are listed in the official CC schedules. Criticism of the scheme has centred on the major changes between editions, the complexity of the notation and its unsuitability for public or non-academic libraries. Nevertheless, the ideas have influenced the library community and some researchers believe that it could fit neatly into Internet resource classification.

7.4.4 Universal Decimal Classification

UDC was developed by the Belgian bibliographers Paul Otlet and Henri La Fontaine at the end of the nineteenth century.[19] It was based on the DDC but it evolved as an analytico-synthetic classification system. Since 1992 UDC has been managed by the UDC Consortium (www.udcc.org). As can be seen in Figure 7.14, UDC contains 10 main classes, called *schedules*, which cover the various disciplines of knowledge. Each class is expounded in one of the so-called *main tables* (Figure 7.15).

The nine common auxiliary tables, numbered 1a to 1k, enumerate concepts that denote recurrent characteristics. These concepts can be combined with a number of the main tables to represent notions such as place, language of the text and physical form of the document. The numbers from the common auxiliary tables always begin with a certain symbol known as a facet indicator. Table 1c, for example, contain the common auxiliaries of language and begins with the equal sign '='. The code for German is 112.2. The code for 'mining' in the main table is 622. Thus, 622=112.2 is the class number for 'Documents in German about mining'.

Additional notational marks, like + / : [] * are used to link two (or more) numbers, expressing in this way relations of various kinds between two (or more) subjects. For example, 622+669 is the classmark for 'Mining and Metallurgy'. Each number corresponds to one of the subjects.

0	Generalities (Science and Knowledge. Organization. Computer Science. Information Science. Documentation. Librarianship. Institutions. Publications)
1	Philosophy. Psychology
2	Religion. Theology
3	Social Sciences
4	[vacant]
5	Mathematics. Natural Sciences
6	Applied Sciences. Medicine, Technology
7	The Arts. Entertainment. Sport
8	Linguistics. Literature
9	Geography. History

Figure 7.14 Main classes of UDC

An example from the UDC Consortium's website is for the item entitled 'Tourist maps of Grafton County (USA, Maine) from 1970s' published in PDF form. The class number is formed by a combination of simple UDC numbers:

348.48(734.211.4)"197"(084.3)(0.034.2PDF)

The constituent parts are:

348.48 *Tourism*
(734.211.4) *auxiliary number of place: Grafton County [USA, Maine]*
"197" *time auxiliary number for 1970s*
(084.3) *auxiliary number of form - map*
(0.034.2) *auxiliary number of form - carrier - digital file*
PDF *is added by the classifier to specify the form of the digital file*

---

5   Mathematics. Natural sciences

53   Physics

539   Physical nature of matter

539.1   Nuclear physics. Atomic physics. Molecular physics

539.12   Elementary and simple particles (charge less than 3)

539.120   Theoretical problems of elementary particles physics

539.120.8   Strong interaction, including experiments

539.120.81   Quantum chromodynamics

539.120.811   Lattice QCD

Figure 7.15 Part of the subclasses of class 5 of UDC

The scheme is published in two volumes. The first volume provides an introduction to the scheme, includes the main and the auxiliary tables and explains the notation and its analytico-synthetic features (UDC, 2005). The second part provides an alphabetical index to simple and composite concepts with the appropriate call numbers (UDC, 2006). The concepts and their class numbers either come directly from the tables or are a synthesis of separate concepts and numbers based on the synthetic practices of the scheme. A part of the index is shown in Figure 7.16.

The scheme is more expressive than the previously reviewed standards, without the need to contain numerous classes attempting to cover all simple and compound

---

alcoholism   178.1

   crime and   343.976

   public supervision   351.761.1

   as welfare problem   364.692:663.51:615.015.6

alcoholism (depiction in films)   791.234:178.1

Figure 7.16 Part of the UDC alphabetic index

concepts. However, it is a challenging system with complex notation and is less used in libraries in comparison to LCC and DDC.

7.4.5   Bliss Bibliographic Classification

The Bliss Bibliographic Classification (BC) was originally devised by Henry E. Bliss and published in four volumes between 1940 and 1953 (Bliss, 1940–1953). It was adopted mainly by British libraries, although it was developed in the USA. The second edition of the system, known by the acronym BC2, was published in 1977 by the Bliss Classification Association (BCA), formed in Britain (www.blissclassification.org. uk). As is stated on the BCA's website 'the revision has been so radical that it is more accurately described as a completely new system, using only the broad outline developed by H.E. Bliss'. Revised schedules are published annually and concern mainly the science and technology categories. The bulletins are available online on the BCA's website.

Bliss is a faceted classification scheme with 13 categories (facets) (Figure 7.17). The scheme is essentially under construction, with 14 volumes published so far and the aim to complete in 23 volumes.

As in CC, the scheme provides some general classes denoted primarily with capital letters (Figure 7.18). Each class is further analysed based on the facets in Figure 7.17. The schedules provide the subclass numbers and the names of the simple concepts they represent, e.g. 'CAB AG Thermodynamics' in class C.

Items are classified based on the categories they represent. For example (taken from the BCA website), based on the divisions of class K, the document 'Unemployment in rural communities in India' is analysed in:

KMU R   Rural communities
KOM   Unemployed persons
KVQ E   Indian society

Using the so-called *retroactive classmark building*, the classmark for the document is KVQ EOM MUR. The facets within each class are ordered from the general to specific, as seen in the above example. In the retroactive approach, a classmark is built by following the reverse order. The repeated initial class letter is left out from the second subclass number onwards. Thus, in the above example the initial K is dropped from the KOM and KMU R numbers. The classmark is written using a space between every three letters. In this approach the final classmark represents the item from its most specific concept to its most general one.

Thing – kind – part – property – material – process – operation – patient – product – by-product –

agent – space – time

Figure 7.17 Facets in Bliss Bibliographic Classification

> **2/9** Generalia, phenomena, knowledge, information science & technology
>
> **A/AL** Philosophy and logic
>
> **AM/AX** Mathematics, probability, statistics
>
> **AY/B** General science, Physics
>
> **C** Chemistry
>
> **D/DF** Astronomy
>
> **DG/DY** Earth sciences
>
> ...
>
> **J** Education
>
> **K** Society (includes social sciences, sociology and social anthropology)
>
> ...
>
> **W** The Arts
>
> **WV/WX** Music
>
> **X/Y** Language and literature
>
> **ZA/ZW** Museology

Figure 7.18 Part of the top-level classes of BC2

The resulting class numbers in this scheme tend to be shorter, compared to the previous systems, while representing compound subjects more precisely. However, it is harder to master the system, there are limited learning resources, some volumes are not yet complete and the scheme is not widely applied.

7.5 Selecting a classification system

Having examined the types of classification systems and their specific implementations, it is time to reflect on the factors that should be considered in selecting a classification system. Some of the criteria that should influence the decision are (Mortimer, 2000; Taylor, 2006) the following.

- *A classification scheme should cover the whole field of knowledge*: the scheme should be as complete as possible, covering popular and uncommon thematic areas. It should accommodate new subjects as they emerge in research and bibliography.
- *The subjects should have an equal representation in the scheme:* LCC, for example, is a more US-centric system. Further, the initial versions of some schemes underrepresented most

religions except Christianity. These properties make a system partial and less general and adaptable.

- *The scheme should be flexible, systematic and convenient for librarians and library patrons*: related topics should be brought together to allow users to easily locate and browse the items of a subject. Also, new subjects should be integrated effortlessly without any need for extensive item rearrangement.
- *The scheme should proceed from the general to the specific*: this feature supports the logical arrangement of the items and ordering within a subject.
- *The system should be clear to understand and should be supported with print and electronic resources*: the notation should be comprehensible and intuitive and the terms used in the scheme should be unambiguous. The availability of auxiliary resources, especially in electronic format, is essential, as all classification systems are complex in nature. The print resources should be easy to handle and consult.
- *It should be updated regularly*: revisions, updates and interpretations are essential for keeping the library collection aligned with advances in the sciences.

Although it cannot be a general and theoretical requirement, as are those in the above list, the decision to resort to a specific classification system depends also on the availability of a version in the more common human language of the library's holdings. For example, a librarian in Greece could more easily turn to DDC than to LCC, as the abridged version of DDC is translated into Greek.

Experience shows that DDC and LCC are the most popular systems. Although it is not an axiom, public libraries tend to use DDC, while academic libraries favour LCC. This is mainly because DDC has more top-level classes and so it is better suited for broad classification in public libraries that have small numbers of holdings per discipline. So, the size of the collection and its nature (e.g. medical libraries) is also a major influence in the selection of a classification system.

7.6   Summary

Classification is an important operation because it brings together related items, facilitating patrons' access to the library's holdings. The classification systems are either universal, e.g. DDC and LCC, or oriented to a specific discipline, e.g. National Library of Medicine (NLM). The major universal systems are primarily hierarchical and enumerative, with some faceted features. The criteria for selecting a system vary significantly, as they depend on the size and the nature of the collection, the features of the system and the available learning resources or electronic services.

Classification is a complex process, as it is challenging to decide what a book is primarily about as more books negotiate compound subjects. The classifier needs to have a thorough understanding of the scheme in use, to know the available classes and the number-building process and to have access to updates, revisions and interpretations of the scheme. Even then, the final decision on where to classify an item is still complex. Items should be classified according to their main subject, to the most specific class. Compound subjects should be classified by their predominant subject or, where it is more reasonable, based on the holdings of the library.

7.7   Review questions

1 Discuss the principles of grouping and ordering in classification.
2 What is subject analysis?
3 Enumerate some language- or discipline-oriented classification schemes.
4 Explain the terms 'open stacks' and 'closed stacks'.
5 Summarize the steps needed to classify a book.
6 Where should a classifier look for information to decide on the main subject of a book? Discuss the potential problems of each source.
7 What is a hierarchical classification system?
8 What do you know about enumerative classification systems?
9 Describe the synthetic classification systems.
10 Describe briefly the DDC system.
11 Provide a brief description of LCC and compare it with DDC.
12 Describe briefly the CC system.
13 Provide a short summary of the characteristics of UDC.
14 What do you know about the Bliss Bibliographic Classification?
15 Which attributes are important in selecting a classification system?

7.8   Practical exercises

1 Visit www.dewey.info and go to the hierarchy of classes and subclasses for the class number 026.34 to understand how the scheme works.
2 Locate the class number for the subject 'Religious education' in DDC, using www.dewey.info.
3 Visit www.dewey.info and write down the class numbers (hundred divisions) used for Christianity and for the other religions.
4 Use the British Library catalogue (catalog.bl.uk) and search for books with 'Research methodology' in the title. Compare the assigned DDC numbers of the top results. Discuss your findings with your classmates and your instructor.
5 Select some of your books and try to find the top-level class of DDC and LCC under which you would classify them. Use the British Library catalogue (catalog.bl.uk), the LC catalogue (catalog2.loc.gov) or another OPAC to confirm and reflect on your choices.

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Dewey Decimal Classification

<div style="float:right">**8**</div>

8.1 Introduction

This chapter elaborates the DDC scheme. An outline of the scheme's main features was given in the previous chapter of the book. Melvil Dewey developed the DDC scheme between 1873 and 1876. The first edition of the classification scheme was published anonymously in 1876 under the title *Classification and Subject Index for Cataloguing and Arranging the Books and Pamphlets of a Library*. DDC is already in its 23rd full edition and the 15th abridged edition. It has grown from an initial 42 total pages in 1876 to more than 4,000 pages in print form in its current version (Satija, 2013). Even the abridged version is more than 1,200 pages long. The print version is titled *Dewey Decimal Classification and Relative Index* (2011).

Dewey was mildly criticized as not being a theorist and that his proposal was not based on any philosophical grounds. The use of only Arabic numerals for notation was another point which made some librarians and theorists sceptical. However, reality and the huge acceptance of the scheme in libraries around the globe have proved that it is a practical and logical scheme for arranging books, especially for general libraries.

Dewey is a hierarchical and enumerative scheme with some faceted or, if you prefer, analytico-synthetic aspects. The basic arrangement of Dewey is by discipline, which means that a topic could be classed in different disciplines, based on its specific aspects. For example, computer works could be classed under various disciplines, as seen in Figure 8.1. The subclass 402.85 is under the main class 'Language' and 910.285 is under the 'History & geography' class. The emphasis of 'Computer applications' in these cases is thus different, although they share the same heading.

The unabridged version of Dewey is published in four volumes and in electronic form, through the WebDewey service.[1]

- *Volume 1:* includes the introduction, a glossary, a guide to the use of DDC, the six auxiliary tables of notation that can be appended to class numbers (i.e. used to implement the synthetic features of the scheme) and the list of changes between editions.
- *Volume 2:* contains the DDC summaries (i.e. main classes, divisions and sections, which total 1000 class numbers), and part 1 of the schedules which enumerate the decimal subdivisions of classes 000 to 599.
- *Volume 3:* presents the decimal subdivisions of classes 600 to 999.
- *Volume 4:* includes the *relative index*, i.e. an alphabetical listing of subjects, with terms identifying the disciplines in which they are treated, subarranged alphabetically under them.

The notation in DDC is purely numerical, containing only Arabic numerals, and possibly a decimal point after the third number if more than three numbers are used to denote a subject (see Figure 8.1 for examples). The longer the number, the more specific the subject of the work (Figure 8.2).

005	Computer programming, programs & data
006.6	Computer graphics
384.3	Computer communication
402.85	Computer applications
501.13	Science--computer simulation
621.391	General works on specific types of computers
621.399	Devices for special computer methods
776	Computer art (Digital art)
910.285	Computer applications

Figure 8.1 Specific classes for various 'computer' related topics

Class number	*Heading*
34	Law
344	Labor, social service, education, cultural law
344.7305325	Terrorism--law--United States

Figure 8.2 Longer class numbers define more specific subjects

8.2 Main classes, divisions and sections

Volume 2 of DDC defines the 10 *main classes* (Figure 8.3). This is the first *summary*, which divides the knowledge spectrum into ten very broad classes.[2] The first class is for general works and the other nine ones are for subject disciplines.

The *second summary*, in volume 2, includes the *hundred divisions*, which are the ten subclasses of each of the ten main classes, resulting in 100 divisions (000, 010, 020, …, 500, 510, …, 910, 920, … 990). Figure 8.4 presents the divisions of the 'Social sciences' class.

The *third summary* includes the *thousand sections*, which are the subdivisions of the divisions of the main classes. The thousand sections are numbered 000, 001, 002, …, 400, 401, …, 997, 998, 999 (Figure 8.5).

The assigned DDC number in the following example is 339 'Macroeconomics and related topics'. However, in broad classification, perhaps in a small public library, the DDC number 330 'Economics' could be used instead. The assignment of a more specific number is also possible, as we discuss in the next section.

Example

Macroeconomics / Andrew B. Abel, Ben S. Bernanke
DDC class number: 339

000	Computer science, information & general works
100	Philosophy & psychology
200	Religion
300	Social sciences
400	Language
500	Science
600	Technology
700	Arts & recreation
800	Literature
900	History & geography

Figure 8.3 First summary: the ten main classes of Dewey

300	Social sciences, sociology & anthropology
310	Statistics
320	Political science
330	Economics
340	Law
350	Public administration & military science
360	Social problems & social services
370	Education
380	Commerce, communications & transportation
390	Customs, etiquette & folklore

Figure 8.4 Second summary: the hundred divisions of the '300 Social sciences' class

```
300    Social sciences

       330    Economics

              330    Economics

              331    Labor economics

              332    Financial economics

              333    Economics of land and energy

              334    Cooperatives

              335    Socialism and related systems

              336    Public finance

              337    International economics

              338    Production

              339    Macroeconomics and related topics
```

Figure 8.5 Third summary: the thousand sections of the '330 Economics' division

8.3   Decimal divisions

The thousand sections are further divided by including a decimal point after the third digit. The scheme takes the second part of its name from this practice. Each subdivision may be further divided to a more specific class (Figure 8.6).

For ease of reading, the DDC numbers are spaced at every third number after the decimal point, e.g. 353.132 63, 344.032 11.

```
339    Macroeconomics and related topics

          …

      339.5 Macroeconomic policy

         339.52    Use of fiscal policy

            339.522   Government spending

            339.523   Budget surpluses and deficits

            339.525   Taxes

         339.53    Use of monetary policy
```

Figure 8.6 Part of a decimal division hierarchy

The book in the following example, deals with a more focused subject than the book in the previous example. The assigned Dewey number is therefore 339.4, which is the number for 'Factors affecting income and wealth'. Clearly, it is not expected that the title or the content of a book will match exactly to the assigned class, but they should be a best fit in that class.

Example

Macroeconomic conditions, health and mortality / Christoper J. Ruhm
DDC class number: 339.4

The even more specific number 339.42 is assigned to the following book. This number corresponds to 'Cost of living', which is placed under '330 Economics', '339 Macroeconomics and related topics', and '339.4 Factors affecting income and wealth'.

Example

Macroeconomic effects of nominal exchange rate regimes : new insights into the role of price dynamics / Robert Kollmann
DDC class number: 339.42

The last three examples all concern books on specialized macroeconomics subjects. In a general library, the classifier could assign to all three the number 330 for 'Economics' or 399 for 'Macroeconomics'. As we discussed in the previous chapter, the classification process depends heavily on the size of the collection and the broad or close classification practices of the library. For example, my home town's public library has, I am sorry to say, about 20 computer science books in total, all of which are classified under 000 as general works. Some of them are so old that they could, quite honestly, be classified under history. This is obviously a bad joke; but you get the idea, that the more books you have, the more specific you need to be.

8.4   Schedules: layout, notes, centered entries

The schedules present the three summaries and their decimal divisions. Hierarchy in DDC is expressed through structure and notation. *Structural* hierarchy means that all topics (aside from the ten main classes) are part of all the broader topics above them. The layout of the schedules indicates the *notational* hierarchy of the scheme both by font size and by indentation. Subclass numbers are indicated by smaller font sizes and are indented (Figure 8.7). The 20th edition of Dewey is available online in various formats.[3] In case you do not have access to newer versions, this now superseded version will help you to develop a good understanding of the structure and notation of the scheme.

331 Labor economics

       ...

  .6   **Workers by ethnic and national origin**

  .62   Immigrants and aliens

        Standard subdivisions are added for either or both topics in heading

        see also 331.544 for migrant workers

  .620 9   History, geographic treatment, biography

        Class here immigrant and alien workers in specific areas, e.g.,

        immigrant workers in Canada 331.620971

        For immigrant and alien workers from specific jurisdictions,

         see 331.621-331.629

Figure 8.7 Extract from the Dewey schedules illustrating the layout of the schedules

<div align="center">SUMMARY</div>

382.01–.09   **Standard subdivisions**

    .1   **General topics of international commerce**

    .3   **Commercial policy**

    .4   **Specific products and services**

    .5   ***Import trade**

    .6   ***Export trade**

    .7   **Tariff policy**

    .9   **Trade agreements**

Figure 8.8 Summary of the subdivisions of the 382 class

Some notes are included under most of the notations in the schedules and in the tables, which are examined later in this chapter. Only a fragment of the notes are provided in the following examples, mainly for illustrative purposes.

The subdivisions extend to several pages, and so single-level summaries in the schedules provide an overview of classes whose subdivisions cover between 2 and 20 pages. Figure 8.8, shows the summary of '382 International commerce (Foreign trade)' as it appears in the schedules in volume 2. The subdivisions of classes 600 to 999 are included in volume 3. Asterisks refer to footnotes. For example, the

asterisks in the summary in Figure 8.8 refer to the footnote 'Add as instructed under 380'.

To complete a number relying on the hierarchy in Figure 8.8, the classifier takes the base number 382 and adds the decimal part, e.g. .3, to form the class number 382.3 for 'Commercial policy'. Please note that in Figure 8.8 some numbers, e.g. .2, are missing. This is a common feature, owing to the evolution of DDC. Some classes have been relocated or revised or expanded and this has eventually disrupted the order, in some cases.

Notes are included in the schedules to supply information that is not obvious in the notational hierarchy or in the headings. The notes regard the order, structure, subordination and other matters and are *critical* for the classification process. They assist and guide the classifier. There are various kinds of notes, providing different information to the classifier. We provide some examples below.

- *Notes that describe what is found in a class*: these provide information about former headings, relocations, the meaning of a term in the heading, synonyms and near synonyms. *Class-here* notes provide additional instructions on which subjects to classify under a specific number.

Examples

305[.48962] Women by social and economic levels
   Relocated to 305.482
004.9 *Nonelectronic data processing
Automatic and nonautomatic
Including nonelectronic analog computers; nonelectronic punched-card data processing, e.g., pre-
. . .
*Use notation T1–019 from Table 1 as modified at 004.019
050 General serial publications
  Class here periodicals; indexes to general serial
  publications

- *Notes that describe what is found in other classes:* they are introduced by *class* elsewhere or *see* references and lead the classifier to interrelated topics, or distinguish among numbers in the same notational hierarchy or lead to a subordinate concept.

Examples

032 *General encyclopedic works in English
  For general encyclopedic works in American
  English, see 031
  *Add as instructed under 031-039
362.1 − 362.4 People with illnesses and disabilities
Class incidence of and public measures to prevent physical diseases in 614.4-614.5; Class comprehensive works in 362.1

Other notes explain irregularities, relocations, discontinuations and a few other concerns. Some numbers are included in square brackets, accompanied by a note that they have been relocated or discontinued. Notes are very useful, as they instruct the classifier on what to beware of or how to use some of the classes.

Some headings are printed in the centre of a page in the schedules and are marked by the symbol >. They are so-called *centered entries* and are used to indicate and relate structurally a span of numbers that together form a single concept for which there is no specific hierarchical notation available.

Example

> 081— 089 General collections in specific languages and languages families
    Class comprehensive works in 080
      See Manual at 081-089

8.5   Auxiliary tables

Six auxiliary tables are included in volume 1 of DDC edition 23, to be used in conjunction with the schedules. Table 7 – Groups of Persons, existing up to edition 21 – has been removed and has been replaced by direct use of notation already available in the schedules.

- **Table 1**: Standard subdivisions
- **Table 2**: Geographic areas, historical periods, biography
- **Table 3**: Subdivisions for the arts, for individual literatures, for specific literary forms
    Table 3A: Subdivisions for works by or about individual authors
    Table 3B: Subdivisions for works by or about more than one author
    Table 3C: Notation to be added where instructed in table 3B, 700.4, 791.4, 808–809
- **Table 4**: Subdivisions of individual languages and language families
- **Table 5**: Ethnic and national groups
- **Table 6**: Languages

The numbers in these tables are never to be used alone but may be appended to class numbers, as instructed, to make them more specific with respect to time periods, places, language and so on. These tables resemble the schedules in that they contain numbers, notes and numbers in square brackets to indicate discontinuation (Figure 8.9). The dash preceding a number implies that this number should not to be used alone, but in conjunction with a number from the schedules.

To give you an idea of how this technique works, let us consider the book *The International Encyclopedia of Dogs*. The class number, or classmark if you prefer this terminology, for 'dogs' is 636.7. However, to indicate that the book is an encyclopedia and not just any book, we affix −03 from Table 1, which denotes an encyclopedia. We come up with class number 636.703. This code shows that the book is an encyclopedia

> **−01** **Philosophy and theory**
>
> Including value
>
> Class here methodology, schools of thought
>
> Class interdisciplinary works on philosophy in 100
>
> > *See Manual at T1--01*

Figure 8.9 Extract from Table 1 depicting the layout of the tables

specifically about dogs. More examples are given below as we discuss the notation of the individual tables.

8.5.1 Table 1: Standard subdivisions

As shown in Figure 8.10, the first table contains the standard subdivisions, some of which denote the form (e.g. −03 dictionaries, encyclopedias etc.). Other numbers are used to express the historical, geographical, philosophical or theoretical perspective of the item.

These numbers have also subdivisions. For instance, −06 is further analysed to '−060 1 International organizations', '−068 Management', '−068 2 Plant management', etc. The −09 subdivision introduces historical or geographic aspects and is used in conjunction with codes from Table 2. The number −089 introduces notation from Table 5.

An example of using the Table 1 subdivisions to build a number was shown at the end of the previous section. Another example would be the periodical *Mediterranean Journal of Mathematics*. The DDC number for mathematics is 510. Since it is a serial publication we add −05 from Table 1 and the assigned DDC number is 510.5. The

> −01 Philosophy and theory
>
> −02 Miscellany
>
> −03 Dictionaries, encyclopedias, concordances
>
> −04 Special topics
>
> −05 Serial publications
>
> −06 Organizations and management
>
> −07 Education, research, related topics
>
> −08 Groups of people
>
> −09 Historical, geographic, persons treatment

Figure 8.10 First-level notations of Table 1

notation from Table 1 differentiates a book on mathematics (510), a serial publication on mathematics (510.5), and a dictionary or encyclopedia on mathematics (510.3). Although you may have expected to end up to the numbers 510.05 and 510.03, please note that there is a rule to disregard the last zero (or zeros) and to use the base number. So 51 + −03 results in 510.3 and 51 + −05 results in 510.5. However, this is not valid for all class numbers and you should check the schedules carefully.

Examples using notation from Table 1

780.3   Dictionary of music / Michael Kennedy ; associate editor, Joyce Bourne.
   780 Music + −03 from Table 1

551.605   Journal of climate
   551.6 Climatology and weather + −05 from Table 1

510.76   Worked examples GCSE mathematics / R. A. Striebig
   510 Mathematics + −076 Review and exercise from Table 1

510.79   World compendium of mathematics competitions / edited by P.J. O'Halloran
   510 Mathematics + −079 Competitions, awards, financial support from Table 1

510.785   Teaching mathematics using ICT / Adrian Oldknow and Ron Taylor
   510 Mathematics + −0785 Computer-assisted instruction from Table 1

8.5.2 Table 2: Geographic areas, historical periods, biography

Figure 8.11 lists the notations of Table 2, i.e. the numbers that can be appended to a number from the schedules to build a more specific number with respect to geographic areas, historical periods and persons. Again, the categories of Table 2 are further subdivided to be more specific. For example, some of the subdivisions of the first listing −1 are '−11 Frigid Zones', '−12 Temperate Zones (Middle latitude zones)', '−13 Torrid Zone (Tropics)' and so on.[4] Figure 8.12 shows some of the divisions of the main category '−4 Europe' of Table 2.

The number −09 from Table 1 introduces a number from Table 2. This concerns the notations −3 to −9 of Table 2. So, for instance, if you are classifying a book on 'Macroeconomics in the Netherlands', you start from 339 and will add from Table 1 the notation −09 and from Table 2 the notation −492 to build the number 339.094 92. The examples below show some numbers based on the schedule's number 339, −09 from Table 1 and the notation from Table 2 which defines the specific area.

339.094 Macroeconomics, Europe
339.094 2   Macroeconomics, England and Wales
339.094 4   Macroeconomics, France and Monaco
339.094 9   Macroeconomics, Other parts of Europe
339.094 92   Macroeconomics, Netherlands
339.094 94   Macroeconomics, Switzerland

−1	Areas, regions, places in general; oceans and seas
−2	Biography
−3	Ancient world
−4	Europe
−5	Asia
−6	Africa
−7	North America
−8	South America
−9	Australasia, *Pacific Ocean islands, Atlantic Ocean islands, Arctic islands, Antarctica, extraterrestrial worlds

Figure 8.11 First-level notations of Table 2

−49	Other parts of Europe
−491	Northwestern islands
−492	Netherlands
−493	Belgium and Luxembourg
−494	Switzerland
−495	Greece

Figure 8.12 Part of the divisions of '−4 Europe'

Examples using notation from Table 1 and Table 2

339.094   Macroeconomics : a European perspective / Olivier Blanchard, Alessia Amighini and Francesco Giavazzi
   339 + −09 from Table 1 + −4 Europe from Table 2

339.094 92 Fluctuations and growth in a near full employment economy : a quarterly econometric analysis of the Netherlands / W. Driehuis ; foreword by C.A. van den Beld
   339 + −09 from Table 1 + −492 Netherlands from Table 2

Another way to add notation from Table 2 is when we are instructed to do so by 'Add to base number … from Table 2' notes attached to class numbers, as in the following.

> **015** *Bibliographies and catalogs of works from specific places*
> *Add to base number 015 notation T2–1-T2–9 from Table 2, e.g., works issued in China 015.51; then add 0* and to the result add the numbers following 011 in 011.1-011.7, e.g., catalogs of manuscripts from China 015.51031, catalogs of manuscripts from China held in German libraries 015.510310943*

8.5.3 Table 3: Subdivisions for the arts, for individual literatures, for specific literary forms

Table 3 consists of the following three subtables and is used only in conjunction with numbers from the 800 class (Literature and rhetoric):

- *Table 3A:* Subdivisions for works by or about individual authors
- *Table 3B:* Subdivisions for works by or about more than one author
- *Table 3C:* Notation to be added where instructed in Table 3B, 700.4, 791.4, 808-809.

Notation from Table 3 can be added only to a base number, i.e. a number from the schedules under the 800 class which is identified by an asterisk (*). Table 3A contains standard mnemonic notation for literary forms (Figure 8.13).

If you have a work on German poetry by one author, you add −1 to the base number 830 to develop the number 831. In cases of works by more than one author you should consult Table 3B and follow a similar process.

Major literatures, 810-890, are further divided into time periods, which are listed in the schedules. Some of the period divisions of the '810 American literature in English' are '1 Colonial period, 1607-1776', '5 1900-1999', '6 2000-'. This number is added after the notation from Table 3.

−1 Poetry
−2 Drama
−3 Fiction
−4 Essays
−5 Speeches
−6 Letters
−8 Miscellaneous writings

Figure 8.13 Literature forms in Table 3A

Examples using notation from Table 3A and notation for period

811.1 A concordance to the minor poetry of Edward Taylor (1642?-1729), American colonial poet / edited by Raymond A. Craig

    81 base number for American literature in English

    + −1 from Table 3A for Poetry

    + 1 from the schedules for Colonial period

811.6 The standing wave : poems / Gabriel Spera

    81 base number for American literature in English

    + −1 from Table 3A for Poetry

    + 6 from the schedules for works from 2000 onwards

8.5.4 Table 4: Subdivisions of individual languages and language families

The notation in Table 4 has to be used in conjunction with base numbers of classes 420-490 starting with an asterisk (*). Figure 8.14 shows a part of Table 4.

−01–09 Standard subdivisions

−1   Writing systems, phonology, phonetics of the standard form of the language

−2   Etymology of the standard form of the language

−3   Dictionaries of the standard form of the language

−5   Grammar of the standard form of the language

−7   Historical and geographic variations, modern nongeographic variations

−8   Standard usage of the language (Prescriptive linguistics)

Figure 8.14 Top-level notation of Table 4

To understand how Table 4 is to be used, let us consider an example provided in Dewey. The number '439.82 *Norwegian' is included in the schedules. If we want to classify a grammar book for the Norwegian language, then the −5 is added at the end of 439.82 to create the class number 439.825.

Examples using notation from Table 4 and Table 6

439.825   Norsk generativ syntax / av Tor A. Åfarli, Kristin M. Eide ; med tillegg av Lars G. Johnsen, Randi A. Nilsen, Torbjørn Nordgård

    439.82 *Norwegian + −5 from Table 4 for grammar

439.75   Feature distribution in Swedish noun phrases / Kersti Börjars

    439.7 *Swedish + −5 from Table 4 for grammar

439.7321   Swedish practical dictionary : Swedish-English, English-Swedish / Harald Hille
   439.7 *Swedish + −3 from Table 4 for dictionary
   + −21 from Table 6 for English

In the last example we added −21 from Table 6 for English because there is a relevant note in Table 4 to do so for bilingual dictionaries. In this way all the information, i.e. 439.7 Swedish, −3 dictionary, −21 English, is reflected in the number so built.

8.5.5   Table 5: Ethnic and national groups

The notation of Table 5 (see Figure 8.15) has to be used as instructed in the schedules of specific classes or with the interposition of notation −089 from Table 1. Table 5 deals with persons in relation to their ethnic and national origins.

−1	North Americans
−2	British, English, Anglo-Saxons
−3	Germanic peoples
−4	Modern Latin peoples
−5	Italians, Romanians, related groups
−6	Peoples who speak, or whose ancestors spoke, Spanish, Portuguese, Galician
−7	Other Italic peoples
−8	Greeks and related groups
−9	Other ethnic and national groups

Figure 8.15 First-level notations of Table 5

In 781.621-781.629 classifiers are instructed to add notation from Table 5. The classmark for 'Folk music' is 781.62. The work *New Zealand Folksongs* would take the number 781.6223, i.e. 781.62 from the schedules plus −23 for 'New Zealanders' from Table 5. Similarly the work *Musica popolare a Creta* is assigned the number 781.62 + −893 for Greek from Table 5. The assigned number is 781.62893.

You should be cautious, however, as this technique is to be applied only when it is noted to do so in the respective class number. Let us illustrate this by using the book *Folk Dancing in Greece*. The number for 'Folk and national dancing' is 793.31. Since there is no instruction to use Table 5, if you still want to provide a more specific number to depict the geographic perspective, then you should apply the notation of Table 1 and Table 2, as explained earlier in this chapter.

Example

793.31 Folk and national dancing
−09   Historical, geographic, persons treatment (Table 1)
−495   Greece (Table 2)
Classification number for a book on Folk Dancing in Greece: 793.319495

Please note that the 793[.3109] number which derives from 793.31 + −9 is bracketed with a note 'Do not use; class in 793.319'. That is why the final number does not contain the 0.

Another method of using notation from Table 5 is to introduce it with the notation '−089 Ethnic and national groups' of Table 1. The example provided in Dewey is 'Ceramic arts of Jews'. The number 738 stands for 'Ceramic arts' and −924, the notation from Table 5, for 'Hebrews, Israelis, Jews'. The resultant number is 738.89924 (738 + −089 from Table 1 + −924 from Table 5).

Example using notation from Table 1 and Table 5

793.310 899 749 4   Dances of the Tewa Pueblo Indians : expressions of new life / Jill D. Sweet
   793.31 Folk music + −089 from Table 1 + −97494 for Tewa
   (i.e. Tewa Indians) from Table 5

8.5.6 Table 6: Languages

Again, the notation of Table 6 is never to be used alone, but only with those numbers from the schedules and other tables to which the classifier is instructed to add notation from this table. Figure 8.16 shows the top-level notation of Table 6.

−1   Indo-European languages

−2   English and Old English (Anglo-Saxon)

−3   Germanic languages

−4   Romance languages

−5   Italian, Dalmatian, Romanian, Rhaetian, Sardinian, Corsican

−6   Spanish, Portuguese, Galician

−7   Italic languages

−8   Hellenic languages

−9   Other languages

Figure 8.16 First-level notations of Table 6

The class number for 'Modern versions and translations' of the Bible is 220.5. A notation from Table 6 can be appended to this number to indicate the specific translation. The class number for 'La Bibbia' is 220.551.

Examples using notation from Table 6

220.541   La Bible / Par Emile Osty
   220.5 + −41 for French from Table 6

220.551   La Bibbia, nuovissima versione dai testi originali / con introduzioni e note di A. Girlanda . . . [et al.]
   220.5 + −51 for Latin from Table 6

034.1   Le petit Larousse 2005 en couleurs
   034 General encyclopedic works in French, Occitan, Catalan
   + −41 French from Table 6
   The base number 03 is used instead of 034 to build the final number; 034 contains the instructions and examples on how to add notation from Table 6

8.6   Relative index

As we saw is the previous sections, the schedules in volumes 2 and 3 cite the main classes and their divisions, including short but very useful summaries and classification guidelines in the form of notes. The information is arranged by discipline and so, to classify a book we first need to identify the discipline and then search for the specific subject within the discipline. A problem arises from the fact that related subjects are scattered across various disciplines (see Figure 8.1 for example). The *relative index*, which Melvil Dewey claimed to be an original contribution, is an alphabetical index to the subjects of the scheme. It brings together related subjects and the disciplines to which they belong. Figure 8.17 shows some 'Quality control' related topics, in alphabetical order. The classmarks are shown in the second column.

It is a valuable tool enabling the quick discovery of class numbers. However, the classifier should then consult the schedules, as they provide critical information in

Quality control	
management	658.401 3
military administration	355.685 7
production management	658.562
public administration	352.357
statistical mathematics	519.86

Figure 8.17 Part of the relative index

notes. Further, some terms may not be included in the relative index. These terms correspond to general concepts represented by standard subdivisions such as education, statistics, laboratories and management. Examples of such terms are Art education, Educational statistics, etc.

8.7   Combining class numbers

In some classmarks the classifier is instructed to add notation, partial or whole numbers from other parts of the schedules. As you can see in the examples below, copied from the schedules of DDC 23, it is possible to add any number after 016 or 026 to achieve the appropriate specificity.

> **016** *Bibliographies and catalogs of works on specific subjects*
>   *Add to base number 016 notation 001-999, e.g., bibliographies of computer programs and software 016.0053, of general encyclopedic works 016.03, of philosophy 016.1, of novels 016.80883, of general collected biographies 016.92*

> **026** *Libraries, archives, information centers devoted to specific subjects*
>   *Add to base number 026 notation 001-999, e.g., medical libraries 026.61.*

A book on 'bibliography of mammals' is assigned the number 016.599, which results from 016 plus 599 for 'Mammalia (Mammals)'. This technique is applicable to other class numbers as well, as indicated in their notes, e.g. in 133.58 'Application of astrology to specific topics'. The decimal point is dropped from the second number, if it exists, as only one decimal point is allowed.

Examples of adding full numbers to other class numbers

016.579   Index fungorum
   016 + 579 Natural history of microorganisms, fungi, algae

026.34   Planning your library's law book program / West Publishing Company
   026 + 34 Law

133.5864677   Soul mates & hot dates : how to tell who's who / Maria Shaw
   133.58 + 646.77 Dating and choice of mate

It is also possible to add only part of a number to a base classmark to build a more specific number. Examples of such cases are given below.

> **003.3** *Computer modeling and simulation*
>   *Add to base number 003.3 the numbers following 00 in 004-006, e.g., computer simulation languages 003.3513*

> **057** *General serial publications in Slavic languages*
>   *Add to base number 057 the numbers following 037 in 037.1-037.9 for language only, e.g., Polish-language serial publications 057.85*

The number 003.3 can be expanded by adding, for instance, the part of the number shown in Figure 8.18 following the double zero. E.g. 003.3633 would be assigned to a work on simulation and knowledge-based systems.

006.3	*Artificial intelligence
006.31	*Machine learning
006.32	*Neural nets (Neural networks)
006.33	*Knowledge-based systems
006.35	*Natural language processing
006.37	*Computer vision

Figure 8.18 Selected parts of the subdivisions of the 006 class

Figure 8.19 shows a part of the divisions of the 037.8 'General encyclopedic works in Slavic languages' class. These numbers can be added at the end of 057 to build a more specific number.

037.1	*General encyclopedic works in Russian
	…
037.84	*General encyclopedic works in Slovenian
037.85	*General encyclopedic works in Polish
	…
037.91	*General encyclopedic works in Ukrainian
037.99	*General encyclopedic works in Belarusian

Figure 8.19 Selected parts of the subdivisions of the 037 class

Examples of adding partial numbers

057.1   Moscow daily news
   057 + .1 from 037.**1** General encyclopedic works in Russian

057.91   Panorama Ukraine
   057 + .91 from 037.**91** General encyclopedic works in Ukrainian

003.363   Artificial intelligence in simulation / Iván Futo, Tamás Gergely
   003.3 + .63 from 00**6.3** Artificial intelligence

8.8   Classifying with Dewey

Classifying a work with Dewey requires determination of the subject, the disciplinary focus and, if applicable, the approach or form. The sources to be used to determine the subject vary, as we discussed in the previous chapter. The title, the table of contents, the text itself and, possibly, external sources may be used to determine the aboutness of the book. The steps to follow then, as described in the introduction to the standard, are:[5]

- The classifier must then select the proper discipline, or field of study, of the work. The Dewey text guides classifiers to class a work in the discipline for which it is intended, rather than the discipline from which the work derives. The rationale behind this is to bring related works together.
- The next step is to turn to the schedules and through the summaries to discover the appropriate discipline. The class numbers must be checked in the schedules, if the relative index is used.
- Finally, you can add notation from Tables if you are instructed to do so in the schedules or if you just want to provide a more specific number, specifying the form of work, e.g. dictionary, or the geographic area or historical period or another facet.

The above steps appear to be a simple process. However, most books deal with more than one subject of the same or a different discipline. The introduction to the scheme provides instructions on how to handle such cases.[5]

8.8.1   More than one subject in the same discipline

First, the classifier should check whether one subject acts upon the other subject. This approach is called the *rule of application*. For example, the work *The Great Depression: Its Impact on Forty-six Large American Public Libraries* should be classed with 'public libraries'; that is, under '021 Relationships of libraries, archives, information centers'. A more specific number can be then built to add specificity.

If the above instruction does not apply, the classifier should use the subject receiving fuller treatment, or the first of the subjects (*first-of-two rule*) if they are treated equally. In the case of three or more subjects that are all subdivisions of a broader subject, the first higher number that includes all the subjects should be used.

8.8.2   More than one subject in different disciplines

When the interrelated subjects fall into different disciplines, the classifier should attempt to locate an interdisciplinary number in the schedules or in the relative index – if, of course, one is available. For instance, the book *Technology and the Philosophy of Religion* can be classified under '215 Science and religion'.

If there is no interdisciplinary number, the work should be classed in the discipline given the fullest treatment in the work. Further, the classifier should explore the divisions of the main class '000 Computer science, information & general works' for the potential use of one of these classmarks.

Finally, if several equally suitable numbers are applicable to the work and there is no other instruction which could help the classifier to decide on the most appropriate one, DDC provides the following table, in order of preference, to be used as a last resort:

1 Kinds of things
2 Parts of things
3 Materials from which things, kinds, or parts are made
4 Properties of things, kinds, parts, or materials
5 Processes within things, kinds, parts, or materials
6 Operations upon things, kinds, parts, or materials
7 Instrumentalities for performing such operations

The example provided in the DDC text is the work *Surveillance by Border Patrols*, which could be classed in either '363.285 Border patrols' or '363.232 Patrol and surveillance'. Based on the above ordered list, 363.285 should be chosen, since border patrols are a kind of police service, while patrol and surveillance are processes performed by police services.

8.9   More examples: assigning Dewey numbers

A few more examples are demonstrated in this section to help you gain a better understanding of the process. We use books with descriptive titles, to aid the decision on the aboutness and discipline of the book.

Our first example is *The Collins History of the World in the Twentieth Century* by J.A.S. Grenville. Based on the summaries provided at the beginning of this chapter, we need to check the schedules in class 900. Navigating through the hierarchy, we discover the following numbers. Clearly, 909.82 is the number we need.

```
900    History & geography
909    World history
909.1-909.8 Specific historical periods
909.8 1800-
       909.81        19th century, 1800-1899
       909.82        20th century, 1900-1999
       909.83        21st century, 2000-2099
```

The next book is *Lives in Science: How Institutions Affect Academic Careers* by Joseph C. Hermanowicz. This book is about science, and more specifically about physics. So we start with '530 Physics'. However, this book views the subject from a career perspective and therefore we can use the notation '023 The subject as a profession, occupation, hobby' from Table 1 to come up with the number 530.023. Please note that the correct number is 530.023 and not 530.23, as you may have expected based on some previous examples. This is because in the schedules the numbers '530.01 Philosophy and theory', '530.02 Miscellany', '530.03-530.09 Standard subdivisions' are listed. This means that the zero is retained for the class 530 when notation from Table 1 is added. Following this pattern, we come to 530.023.

Just Java 2 by Peter van der Linden is a book about the Java computer programming language. The number for 'Computer programming, programs, data' is 005. Exploring the divisions of this class we discover the '005.133 Specific programming languages' classmark, which we will use. Programming languages is a tricky subject, as more class numbers are available for them. Nevertheless, we rely on the note 'Class here comprehensive works on programming with specific programming languages', found under 005.133.

The last example is *Experimental Design: Procedures for the Behavioral Sciences* by Roger E. Kirk. This is a book on social sciences, i.e. class 300. Searching Table 1, we find the following notation:

−07   Education, research, related topics
−072   Research
−0724   Experimental research

To reflect the 'Experimental design' dimension on the work we need to add −0724 from Table 1 to come up with the classmark 300.724.

909.82	The Collins history of the world in the twentieth century
530.023	Lives in science : how institutions affect academic careers
005.133	Just Java 2
300.724	Experimental design : procedures for the behavioral sciences

8.10   Call numbers

A call number, also known as a call mark or shelfmark, usually consists of the Dewey number and the first three letters of the author. For example, the book *Macroeconomic Conditions, Health and Mortality* by Christoper J. Ruhm is assigned the call number '339.4 RUH'. Call numbers are traditionally arranged vertically on the spine of the book, as shown in Figures 8.20 and 8.21.

A call number may also contain another symbol, in front of the class number, to indicate the location of the item on the shelves. This is known as the *location symbol* and it is typically made up of one or more letters indicating the collection. For example, 'R' or 'REF' suggests reference books, 'AV' audio visual materials and so on.

The *book number*, as shown in Figure 8.20, usually results from the first three or four letters of the first author, or the title if there is no author, i.e. the first three letters of the main entry (see Chapter 4 for 'main entry'). Some libraries use the Cutter numbers as the book number. L39 is the cutter number for the sequence 'Laz' and R63 for the sequence 'Rob'. The method for calculating Cutter numbers is discussed in the next chapter, as is the LCC scheme, which primarily employs this technique in call numbers. Finally, the year of publication may be added at the end of the book number.

339.4 *class number*

RUH *book number*

Figure 8.20 A call number as written on the spine

339.4	REF	811.1
R84	030	C73
	NEW	1992
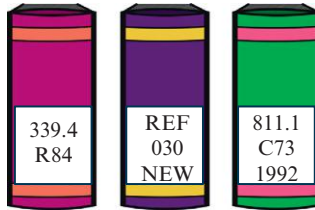
Figure 8.21 Examples of call numbers

8.11   Web services and online educational resources

Classification with Dewey is electronically supported via WebDewey.[6] This is a subscription-based service that includes the latest version of Dewey. As can seen in Figure 8.22, it supports browsing and searching of the schedules and tables. It also provides a facility for building numbers, which simplifies and speeds up the process. This service is maintained by OCLC (www.oclc.org), which has also developed the dewey.info (intended for Semantic Web applications, but which can also be used as an easy medium for navigating the thousand summary and some of their decimal divisions) of the latest Dewey release.

Figure 8.22 Initial screen of WebDewey

'Classify' is an experimental classification retrieval service available from OCLC.[7] Users can search for items by defining some of their characteristics, e.g. ISBN or title, and retrieve the respective classification number. It can be used to verify the results of your attempts at classification. In addition, OCLC has developed an online set of training materials which include presentations on how to use the tables, and exercises with their answers.[8]

Finally, some older releases of Dewey are digitized in archive.org[3] and can be used to familiarize oneself with the scheme and its typographical conventions. Clearly, they are obsolete releases and should not be applied in real classification work, but can be used for teaching purposes if a newer version is not available.

8.12 Summary

Dewey is a complex yet expressive classification scheme. The classifier needs to have a good understanding of the schedules and to pay close attention to the notes. The number-building capabilities allow the development of quite specific numbers which can express the subject, the form, the period, the language and so on. However, these numbers tend to be quite long and are not intuitive and are thus difficult to manage. Another issue is that some major changes may occur between one version of the scheme and the next as a result of topic relocations and discontinuations. This makes it difficult for libraries to keep aligned with the latest version. The available electronic services, like WebDewey, simplify the process of navigating the schedules and tables and developing compound numbers.

8.13 Review questions

1 'The basic arrangement of Dewey is by discipline.' Explain this statement, providing specific examples.
2 Explain the Dewey notation by providing some examples of Dewey numbers.
3 What do you know about the three summaries?
4 What is 'structural hierarchy' and what is 'notational hierarchy' in Dewey?
5 How many auxiliary tables exist in Dewey? Describe the main purpose of each table.
6 What are the Dewey numbers for a dictionary of agriculture and for a journal on agriculture? The classmark for 'Agriculture and related technologies' is 630.
7 850 is the class number for 'Italian, Romanian & related literatures'. The Table 3A notation for Poetry is −1 and for Drama it is −2. What is the Dewey number for 'Italian poetry' and what for 'Italian drama'?
8 What is the relative index in Dewey?

8.14 Practical exercises

In the following exercises, you should use the Dewey schedules of the latest version or WebDewey. If you do not have access in these resources, use http://dewey.info and the older Dewey releases in https://archive.org.[3]

1 Find the heading for the class number 749.8.
2 What is the class number for a book on 'Philosophy in Denmark'?
3 What is the Dewey number for the work 'The handbook of antique furniture / Plantagenet Somerset Fry'?
4 What Dewey number would you use in a small public library for a book on 'Polymerization', which is an organic chemical reaction, and what classmark would you use in a library with a special section on chemistry books?
5 What is the classmark for the book 'Child Health'?
6 Using notation from Table 1 build a Dewey number for the book 'The astronomy quiz book / Patrick Moore ; illustrated by Lawrence Clarke'.
7 Using notation from Table 1 and Table 2 build a classmark for the book on 'Human rights in Bosnia and Herzegovina after Dayton : from theory to practice / edited by Wolfgang Benedek'. The notation for Bosnia and Herzegovina from Table 2 is −49742.
8 Using notation from Table 4 and Table 6 build a classmark for an 'English-Norwegian dictionary'.

8.15 References

Dewey, M. (2011). *Dewey decimal classification and relative index* (23rd ed.). Dublin, OH: OCLC (J. S. Mitchell, J. Beall, R. Green, G. Martin, & M. Panzer Eds.).

Satija, M. (2013). *The theory and practice of the dewey decimal classification system* (2nd ed.). Oxford, UK: Chandos Publishing.

8.16 Webliography

1. WebDewey classification service, http://www.oclc.org/dewey/versions/webdewey.en.html.
2. The first DDC summary, http://www.oclc.org/research/activities/browser/desc.html.
3. DDC 20 volumes 1 to 4, https://archive.org/details/deweydecimalcla01dewe, https://archive.org/details/deweydecimalcla02dewe, https://archive.org/details/deweydecimalcla03dewe, https://archive.org/details/deweydecimalcla04dewe.
4. The top level divisions of Table 2, http://dewey.info/class/2–0/e23/about.en.
5. Introduction to the Dewey Decimal Classification, http://www.oclc.org/content/dam/oclc/dewey/versions/print/intro.pdf.
6. Web access to the Dewey Decimal Classification (DDC) System, http://www.dewey.org/webdewey.
7. Classify: An experimental classification web service, http://classify.oclc.org/classify2/.
8. Dewey Training Courses, https://oclc.org/dewey/resources/teachingsite.en.html.

Library of Congress Classification

9

9.1   Introduction

The LC was established by an act of Congress in 1800.[1] The LCC scheme was developed by James C.M. Hanson and implemented by Charles Martel for the LC around the turn of the twentieth century (Broughton, 2004; Mai Chan, 1999; Wedgeworth, 1993). It was decided to embark on a new classification scheme, as the previous system was no longer adequate for the fast-growing collection. The classifiers studied the DDC, the Cutter Expansive Classification (CEC) and the German Halle Schema. The structure of LCC was finally influenced by the CEC (Wynar, 1985, p. 403). For instance, class Z of LCC is very similar to a main class in CEC. LCC is used primarily in research and academic libraries in the US and several other countries. LCC was originally developed with the collection of the LC in mind.

As was discussed in Chapter 7, LCC is a mainly enumerative system, which means that it lists all its classes, covering single and compound subjects. This makes the system lengthy, but easier to use as compared to other schemes. The notation is more economical, meaning that, in general, the class numbers are short. The full text of LCC is distributed by the LC's Cataloging Distribution Service in various forms:[2, 3]

- 41 printed volumes, which are called *schedules*
- in electronic form via Classification Web (classificationweb.net)
- a full set of LCC records in MARC 21 or MARCXML format available for purchase.

The schedules are the printed volumes containing the enumerated classes and their divisions, arranged in numeric or alphanumeric order. Each schedule contains an entire class, a subclass or a group of subclasses. The schedules were progressively developed over the last century. The first schedules, 'E-F History: America' and 'Z Bibliography. Library science', were published in 1901 and 1902, respectively. Additional schedules were developed throughout the twentieth century and, in general, the development of new schedules is an ongoing process. LC classification schedules are combined with additions, changes and deletions and are updated annually.

The notation of the LCC is alphanumeric and is typically made up of four kinds of symbols. The first part, consisting of one to three capital letters, shows the class and its main division. The next part, made up of numerals and possibly a decimal number, defines the specific subject within a subclass. The third part is the Cutter number, which results from the item's main entry (author's name or title). The last number is the date of the publication.

For example, the number 'QA76.625 .J36 1996' is the call number – or the 'LC classification (full)' as it is called in the LC online catalogue, 'catalog.loc.gov' – for the book *Web Programming* by Kris Jamsa, Suleiman 'Sam' Lalani, and Steve Weakley.

'Q' is the letter for the 'Science' class.

'QA' is the subclass for 'Mathematics'.

'QA76.625' is the division 'Internet programming. Intranet programming'.

'J36' is the Cutter number resulting from the first three letters 'Jam' of the main author, under whom the main entry is made.

1996 is the publication date.

LCC is a lengthy scheme because of its enumerative nature. It repeats the same concepts concerning periods or forms in the classes, unlike Dewey, which amasses recurring concepts in tables of notations that can then be added to any number. For compound topics, it is sometimes difficult to decide the best class because only certain parts of the compound topic might be enumerated in different classes. In general, it is unusual to find a class which corresponds exactly to the compound subject of the item to be classified, which hinders the classification process.

9.2 Basic classes

The basic arrangement in LCC is by discipline, meaning that books on the same subject but with a different focus might be classed under different disciplines and thus be assigned entirely different class numbers. The scheme divides the entire field of knowledge into 21 basic classes, as seen in Figure 9.1. These classes are roughly equal to academic disciplines or areas of study. Classes E and F are both about the 'History of the Americas'. Most of the classes are further divided into more specific subclasses, identified by two-letter, or occasionally three-letter, combinations (see Figure 9.2 for an example). Subclasses represent branches of the disciplines. Each class may be covered in one schedule or may span a number of schedules. For example, subclasses B-BJ, BL-BQ, BR-BX are covered in three different schedules. Numbering is not consecutive within classes and subclasses, allowing for future expansions.

Each subclass includes a loosely hierarchical arrangement of the topics pertinent to the subclass, going from the general to the more specific (Figure 9.3). The indentation indicates the hierarchy.

Each topic, which is often referred to as a *caption*, is assigned a single number or a span of numbers. Broad headings like 'Philosophy' and 'Mathematical logic', shown in Figure 9.3, are included in the schedules ahead of the subordinate subjects they concern. A broad heading is a means of logically grouping related topics, acting as a superclass of those topics, although it does not have an associated class number. The schedules also contain some notes, which guide the classifier. Notes are explained later in this chapter.

9.3 Structure of the schedules

The schedules have been developed by different groups of experts and may vary in form and formatting conventions, but they all contain the following basic parts.[4]

A General Works

B Philosophy, Psychology, and Religion

C Auxiliary Sciences of History

D General and Old World History

E-F History of the Americas

G Geography, Anthropology, and Recreation

H Social Sciences

J Political Science

K Law

L Education

M Music

N Fine Arts

P Language and Literature

Q Science

R Medicine

S Agriculture

T Technology

U Military Science

V Naval Science

Z Bibliography, Library Science, and General Information Resources

Figure 9.1 The basic classes of LCC

- *Preface*: provides the history of the schedule, changes from previous editions and other introductory notes.
- *Outline of the schedule*: this is a detailed summary of the topics and subtopics in the schedule. Figure 9.4 shows an excerpt from the outline of class Q. The outline provides an overall picture of the arrangement of topics within a schedule. It helps the classifier to decide quickly on the relevant part of the schedule, i.e. where to look for the appropriate class number. For example, to classify a book on computer science, the classifier has to search the subclasses QA75.5-76.95.
- *Body of the schedule*: the text of the schedule enumerates the specific class numbers and their captions. The hierarchical features of the scheme are demonstrated through indentation and broad headings (see Figure 9.3 above and Figure 9.5). The class numbers or classmarks are

Q   Science (General)

QA   Mathematics

QB   Astronomy

QC   Physics

QD   Chemistry

QE   Geology

QH   Natural history – Biology

QK   Botany

QL   Zoology

QM   Human anatomy

QP   Physiology

QR   Microbiology

Figure 9.2 Subclasses of class Q

made by concatenating the class or subclass letters and the numbers denoting a specific subject, as is shown in the examples below.

Examples

Teaching mathematical reasoning in secondary school classrooms / Karin Brodie with contributions by Kurt Coetzee . . . [et al.]
(Mathematics–Philosophy–Study and teaching. Research)
LCC class number: QA8.7

Focus groups as qualitative research / David L. Morgan
(Social sciences (General)–Theory. Method. Relation to other subjects–Interviewing)
LCC class number: H61.28

- *Tables*: these are included at the end of each schedule, or sometimes within the text of a schedule, to extend the notation of the classes. Some tables apply to very limited topics, while others apply generally across all schedules. For example, NA6862.A-Z is the class number for the subject 'Stadia–By region or country, A-Z' of class N. 'A-Z' at the end of the number indicates that a Cutter number should be used instead. A work on 'Stadiums in Italy', for instance, would take the number NA6862.I8, where 'I8' is the Cutter number for the first two letters of 'Italy'.

QA   MATHEMATICS

Mathematics

1   Periodicals, societies, congresses, serial publications

3   Collected works (nonserial)

5   Dictionaries and encyclopedias

7   Addresses, essays, lectures

Philosophy

Cf. QA9.615 Recursive functions. Recursive arithmetic

Cf. QA248+ Foundations of arithmetic. Set theory

Cf. QA267+ Machine theory

Cf. QA681 Foundations of geometry

8   Periodicals, societies, congresses, serial publications

8.4   General works, treatises, and textbooks

8.6   Addresses, essays, lectures

8.7   Study and teaching. Research

Mathematical logic

9.A1   Periodicals, societies, congresses, serial publications

9.A5-Z   General works, treatises, and textbooks

9.2   Addresses, essays, lectures

Study and teaching. Research see QA8.7

Classical logical systems

Including reverse mathematics

Figure 9.3 A part of the QA subclasses

- *Index*: in LCC there is no overall index, which would support the classifier to promptly locate the appropriate classes. Instead, there is an index at the back of each schedule. It is a very useful tool for classifiers, as it is an alphabetical listing of the topics included in that schedule. The index can be either *specific* or *relative*. Specific means that there is only one entry for each topic, e.g. 'Ice cream industry: HD9281' (Figure 9.6). The relative type enumerates all topics and synonyms, showing the relation of each topic to the disciplines which are found, e.g. 'Young people' in Figure 9.7.

```
        OUTLINE

Q1-390       Science (General)

Q1-295          General

Q300-390          Cybernetics

Q350-390             Information theory


QA1-939     Mathematics

QA1-43          General

QA47-59        Tables

QA71-90        Instruments and machines

QA75-76.95    Calculating  machines

QA75.5-76.95       Electronic computers. Computer science

QA76.75-76.765         Computer software
```

Figure 9.4 A part of the class Q outline[5]

```
H              SOCIAL SCIENCES (GENERAL)

       Theory. Method. Relation to other subjects -- Continued

61.26        Panel analysis

61.27        Scaling

61.28        Interviewing

                Including focus groups
```

Figure 9.5 A part of the H class

9.3.1 *Body of the schedule: internal format, notes, notation*

Although the arrangement within a class is determined by the subject specialists, the classes follow what has come to be known as 'Martel's seven points of internal format' (Wynar 1985; Taylor, 2006). Under this format the hierarchical arrangement progresses from the general to the specific, as follows (see Figure 9.3 above).

I

IBM Personal Computer: HF5548.4.I24

IBM RS/6000 Workstation (Computer):

   HF5548.4.I25

IBM System 38 (Computer):

   HF5548.4.I26

Ice

   Selling: HF5439.I25

Ice cream

   Selling: HF5439.I3

Ice cream industry: HD9281

Figure 9.6 Part of the index of the H (Social Sciences) class

Y

Young people

   Church activities for: BV1640

   Prayers for: BV283.Y6

   Religious education: BV1485

Figure 9.7 Part of the index of the BR-BX (Christianity, Bible) subclasses

- General form divisions: such divisions are periodicals, society publications, collections, dictionaries or encyclopedias, conference, exhibition, or museum publications, yearbooks, directories, and documents.
- Theory, philosophy
- History, biography
- General works
- Law
- Study and teaching, research
- Subjects and subdivisions, progressing from the more general to the specific.

Knowledge of the arrangement may help to speed up searching of the specific subdivision, although the index is probably the best place to start the search.

    Notes are included in the schedules to provide clarifying information or to refer the classifier to another section of the schedule. As seen in Figure 9.8, there are *see* and

LA	HISTORY OF EDUCATION
...	
7	Individual authors
	Cf. LB5+ Theory and practice of education
...	
95	Christian education
	Including general history
...	
186	Student life
	For political activity see LB3610
...	
210	Description. Organization. Policy
	Class here general works only

Figure 9.8 Part of a schedule with *see* and *class here* notes

class here notes, which advise the classifier of the scope of the class number or redirect the classifier to another section, which is often a result of reclassification. *See* notes are referred to as *explanatory* notes, while *class here* notes are known as *scope* notes. Notes starting with *Including* list the topics included within the subject. *Cf.*, i.e. confer notes, indicate that related topics are classified elsewhere in the schedules.

The need to use notation from the tables is often indicated with special notes, e.g. 'Add country number in table to N5800' or 'Apply Table N5801/1 for decimal-number countries'.

The *notation* in LCC is mixed, meaning that class numbers are alphanumeric combinations, as we mentioned earlier. The usual format of class numbers is QA7 or H61.26, that is, one to three letters followed by some numbers, which may also contain a decimal point. However, some different patterns are found in the schedules, as is illustrated by the following examples.

- *KK9.73.W87*: this is the class number for 'Württemberg-Baden' (which is under the hierarchy: Class K-Law of Germany–Official gazettes–Military government gazettes (Allied occupation of Germany, 1945-1955)–Military government gazettes of individual states. By state, A-Z–Württemberg-Baden). 'W87' is the Cutter number produced by the first three letters 'Wür' and is included in the schedules. This is a common pattern when the subject is the name of something, e.g. place, person, institution, programming language, ethnic group etc.

Examples

Impressionism : pastels, watercolors, drawings / Christopher Lloyd
(Visual arts–History–Modern art–By century–19th and 20th centuries–19th century–Special aspects or movements, A-Z–Impressionism)
LCC class number: N6465.I4

Creating collaborative leadership and shared governance at a California community college : a case study / Matthew Escover ; with a foreword by Patricia Turner Mitchell
(Theory and practice of education–Higher education–Supervision and administration–State supervision–By state, A-W–California)
LCC class number: LB2341.6.C3

- *H62.5.A-Z*: this is the class number for the topic hierarchy 'Social sciences (General)–Study and teaching. Research–By region or country, A-Z'. The A-Z at the end of the number indicates that a number from the tables should be used.
- *(1661-1670) Asia see HA4551 +*: Parenthesized numbers indicate relocated or discontinued numbers.

9.3.2 Tables

Tables are included in almost all of the schedules, either inside a schedule (Figure 9.9) or at the end of the schedule and referenced inside a schedule (Figures 9.10 and 9.11).

In both cases .x means to provide a Cutter number by using only one number after the first letter of the country. For example, the Cutter number for 'Great Britain' is thus 'G7' stemming from 'Gr'.

NA6862.A-Z   By region or country, A -Z

       Under each country:

      .x   General works

      .x2A-.x2Z   Special. By city (or by name if

               non-urban), A-Z

Figure 9.9 Table inside a schedule

HE311.A-Z   Other regions or countries, A-Z

       Subarrange each country by Table H73

Figure 9.10 Reference to a table from the schedules

Table for breakdown of countries, etc. (2 Cutter nos.)	
H73 .x	General works
H73 .x2A-.x2Z	Local, A-Z

Figure 9.11 Table at the end of a schedule

Example

Fares please! : the story of public transport / Stan Yorke
(Transportation and communications–Urban transportation–By region or country–Other regions
or countries, A-Z)
LCC class number: HE311.G7

Tables are usually special to the place they are applied, which makes their usage inconsistent (Broughton, 2004). This makes their exhaustive presentation challenging. For more indicative examples, but again not an exhaustive presentation, you could consult Broughton (2004, ch. 16) and Dittmann and Hardy (2007, ch. 5).

9.4 Cutter numbers

Cutter numbers are alphanumeric symbols devised by Charles Ammi Cutter for arranging books. The alphanumeric code derives from, usually, the first three letters of the main author or the title of the book, depending on what it is used as the main entry. Actually, Cutter developed a two-figure author table. This table was later expanded by Kate Sanborn, known as Cutter-Sanborn three-figure author table (Cutter, 1904[6]). However, the terms 'Cutter number' and 'Cutter table' are more commonly used. Figure 9.12 shows the LC Cutter conversion table.[7] The Cutter number is attached at the end of a class number and is preceded by a decimal point.

A Cutter number begins with the first letter of the author's name and contains two or three numbers representing the subsequent letters of the name. For example, the Cutter number for 'Wynar' is 'W96'. This number comes from the first three letters. Since the name starts with the consonant W, we use row 4 of the Cutter table, 'After other initial *consonants*'. The numeral 9 stands for y, and n becomes 6, based on row 5, 'For expansion', of the Cutter table.

Name	Cutter number
Hamlet	H36
Alander	A43
Jones	J66
Quanbeck	Q36
Scarsi	S33

1. After initial *vowel*								
for the second letter:	b	d	l-m	n	p	r	s-t	u-y
use number:	2	3	4	5	6	7	8	9
2. After initial letter *S*								
for the second letter:	a	ch	e	h-i	m-p	t	u	w-z
use number:	2	3	4	5	6	7	8	9
3. After initial letters *Qu*								
for the second letter:	a	e	i	o	r	t	y	
use number:	3	4	5	6	7	8	9	
For initial letters *Qa-Qt*, use 2-29								
4. After other initial *consonants*								
for the second letter:	a	e	i	o	r	u	y	
use number:	3	4	5	6	7	8	9	
5. For expansion								
for the second letter:	a-d	e-h	i-l	m-o	p-s	t-v	w-z	
use number:	3	4	5	6	7	8	9	

Figure 9.12 Cutter conversion table

You should note that not all letters are listed in the table. In these cases the classifier should use a number which corresponds to the letter closest to the letter not listed. For example, for the name 'Scarsi', the letter c is not listed in the table. So we used the number 3, which corresponds to the letters 'ch' listed in the table.

Some Cutter numbers are already included in the schedules to indicate a geographical or another characteristic of the topic. For example, 'QA76.73.J38' is the class number for 'Programming languages–Individual languages, A-Z–Java' under class 'QA–Mathematics'. A book in Java would then have two Cutter numbers, e.g. QA76.73.J38 L52 2015. The year of publication or copyright year is also included in the class number.

9.5   Call numbers

A call number consists of the class number (classmark) plus the year of publication or copyright year. So, to build a call number the classifier has first to find the correct class number and then add the Cutter number and the year. The class numbers and the call
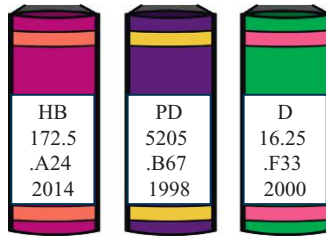
Figure 9.13 Examples of call numbers

numbers are shown in the examples below. Figure 9.13 shows the call numbers as on the spine of a book.

Examples

Macroeconomics / Andrew B. Abel, Ben S. Bernanke. – 8th ed. – Boston : Pearson, 2014
(Economic theory. Demography–Economic theory–General works–Recent, 1843/1876–English and American–Macroeconomics)
LCC class number: HB172.5
Call number: HB172.5 .A24 2014

Danish-English, English-Danish dictionary & phrasebook / Erna Maj. – New York : Hippocrene Books, 2002
(Germanic philology and languages–Danish–Language–Lexicography–Dictionaries–Dictionaries with definitions in English)
LCC class number: PD3640
Call number: PD3640 .M35 2002

In the case of conferences or documents that have no personal author, Cutter numbers are produced based on the title of the work, i.e. the main entry. In the example below, 'P76' is the Cutter number derived from the first three letters of the title. 'G7' is the Cutter number produced from the country name 'Great Britain' and the respective table of H73 of class H.

Examples

Professions at bay : control and encouragement of ingenuity in British management / edited by Ian Glover, Michael Hughes. – Burlington, VT : Ashgate, 2000
(Industries. Land use. Labor–Labor. Work. Working class–By industry or trade, A-Z)
LCC class number: HD8038.G7
Call number: HD8038.G7 P76 2000

The face of the earth : environment and world history / edited by J. Donald Hughes. – Armonk, N.Y. : M.E. Sharpe, 2000
(History (General)–Study and teaching–General special)
LCC class number: D16.25
Call number: D16.25 .F33 2000

Note that in the second example above the Cutter number 'F33' is produced by the first three letters of the second word, 'face', of the title. Initial articles in titles such as *the*, *a*, *an*, etc. are ignored. Hyphens are also ignored (e.g. 'On-line' is treated as 'Online') and abbreviations are not spelled out.

9.6   Classifying with LCC

Classification with LCC is generally an easy task, as long as you find the correct class number in the lengthy schedules. First, the classifier has to determine the subject of the book. Then, based on this subject, the appropriate schedule should be selected. To determine the subject of the work, the classifier should examine the title, the other title, the table of contents, the text, other external sources etc. The next step it to turn to the index of the schedule and, after locating a class number, the classifier has to look it up in the body of the schedule to verify his selection. A Cutter number should then be assigned based on either the first author's name or the title of the work. The date of publication is added onto the number to build the complete call number (or call mark).

The general principles of classifying a book using LCC are as follows.[9]

- Class works according to their subject matter.
- Class a work by its specific subject, not by its form under a broader topic.
- Within a given topical area, ignore form unless form captions have been established.
- Within a given topical area, prefer classing by subject over classing by place.
- Use the most specific number available.

When several subjects are treated in a work, then the classifier should class the work using the most suitable option of the following.

- If it is available, a broader subject covering a larger topic than the individual topics of the book should be used.
- The work could be classed according to its dominant subject or under the first subject mentioned in the work.

Another problem that can arise is that more than one class number may appear satisfactory. In such cases, the work should be classed according to the intent of the author or where it appears that the work would be most usefully located.

The examples below show some cases where two or more topics are treated in the book, according to the title at least. In the first example, the work is classed under astronomy, which is the predominant subject. In the second example there is a compound subject, 'Alcoholism and the Bible', which covers the compound subject of the work. The third example, although it is about drinking and other substances, is classed under the class Q, while in the second example is classed under class H. It is the focus of the subject that drives the selection of a class number.

Examples

Physics and chemistry of circumstellar dust shells / Hans-Peter Gail, Erwin Sedlmayr
(Astronomy–Descriptive astronomy–Interstellar matter–Circumstellar matter)
LCC class number: QB792
Call number: QB792 .G35 2014

Bible and social drinking / William Dawson Jeffcoat
(Social pathology. Social and public welfare. Criminology–Alcoholism. Intemperance. Temperance reform–Alcoholism and religion–Alcoholism and the Bible)
LCC class number: HV5180
Call number: HV5180 J44 2006

Nicotine, caffeine and social drinking : behaviour and brain function / edited by Jan Snel and Monicque M. Lorist
(Physiology–Animal biochemistry–Special substances–Organic substances–Miscellaneous organic substances, A-Z–Alcohol)
LCC class number: QP801.A3
Call number: QP801.A3 N53 1998

9.7   Web services and online educational resources

Classification Web[8] is an electronic service for LCC and LCSH. The service supports searching and browsing of the schedules and provides links to the respective tables to build the appropriate class numbers. It also provides mappings to the respective Dewey numbers.

LC has developed training materials on the principles and practices of LCC.[9] The emphasis is on basic skills and on application of the scheme in areas most often used by generalists. Previously published classification schedules are available online.[4] Users can familiarize themselves with the scheme by using these materials, although they cannot be used for real classification cases, as they have been superseded.

9.8   Summary

LCC is an enumerative system which attempts to spell out all the single and compound subjects. It was developed for the collection of the LC and has a strong US bias (Broughton, 2004). Subjects like law, politics and management are represented satisfactorily, while others like technology and law are underrepresented. The system lacks any theoretical grounding and does not exhibit any mnemonic characteristics. Further, it is lengthier than other systems. For example, Dewey comes in four printed volumes, while LCC consists of over 40 schedules.

Despite its drawbacks, LCC is perhaps the easiest classification scheme to apply. You need simply to locate the relevant schedule and then to search for the suitable

class number. Classification Web simplifies searching within the schedules. There also are many cooperative initiatives which reduce the effort.

Dewey consists of fewer classes, so in large academic libraries with many books on close subjects it would result in long numbers. The reality is that LCC is preferred in academic libraries, while Dewey is preferred in smaller, public or school libraries.

9.9   Review questions

1 Explain the LCC notation by providing some examples of LCC numbers.
2 Give examples of some of the main classes of LCC.
3 What is a broad heading?
4 Describe the structure of a schedule.
5 What do you know about the tables in LCC?
6 What do you know about the index in LCC schedules?
7 What kinds of notes exist in LCC?
8 What is a Cutter number?
9 Explain the parts of the call number 'N6465.I4 S74 2009'.

9.10   Practical exercises

For the following exercises, you should use the LCC schedules of the newest version or Classification Web. If you do not have access in these resources, you could use the older schedules found online at http://www.loc.gov/aba/publications/FreeLCC/free lcc.html.

1 Find the caption for the class number B5295.
2 Find the class number for a general work on 'Women's studies'.
3 Find the class number and the call number for the book 'Primary mathematics teaching theory and practice' / Claire Mooney.
4 Find the Cutter number for the authors:
   a. Claudia Rawlins
   b. Terence Lee
   c. Clarence C. Strowbridge
   d. James M. Henslin
5 What is the class number for the 'International journal of social science research'?
6 What is the class number for the book 'Understanding social science research' / Thomas R. Black?
7 What is the Cutter number in the following cases:
   a. The Collins history of the world in the twentieth century / J. A. S. Grenville. − Rev. trade pbk. ed. − London : HarperCollins, 1998
   b. Just Java 2 / Peter van der Linden. − 5th ed. − Upper Saddle River, N.J. : Prentice Hall PTR, 2002
   c. Readings in social research methods / [edited by] Diane Kholos Wysocki. − 2nd ed. − London : Wadsworth/Thomson Learning, 2004
8 Build the call numbers for the books in the previous question.

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2. Library of Congress Classification, http://www.loc.gov/catdir/cpso/lcc.html.
3. Cataloging Distribution Service, http://www.loc.gov/cds/.
4. Library of Congress Classification PDF Files, http://www.loc.gov/aba/publications/Free LCC/freelcc.html.
5. Outline of class Q, http://www.loc.gov/aba/publications/FreeLCC/Q-outline.pdf.
6. Explanation of the Cutter-Sanborn author marks, https://openlibrary.org/books/ OL7024421M/Explanation_of_the_Cutter-Sanborn_author_marks_(three_Figure_tables).
7. LCC Cutter table, http://www.loc.gov/aba/pcc/053/table.html.
8. ClassificationWeb, http://classificationweb.net/.
9. Fundamentals of Library of Congress Classification, http://www.loc.gov/catworkshop/ courses/fundamentalslcc/.

Subject access: LCSH, Children's Subject Headings and Sears List of Subject Headings

10

10.1 Introduction

The purpose of classification is to bring related items together. Books and other library materials are grouped on the shelves based on their predominant topic or one of the topics they cover. However, most items cover additional topics besides the one chosen during classification. Therefore a more effective method is needed for helping library patrons to access these items by their additional topics. This is achieved by subject headings, which are controlled lists of terms or phrases used to describe the subjects of items. Selected subject headings are included in the bibliographic record of each item (Figures 10.1 and 10.2).

The prevailing list applied in library catalogues is the LCSH[1,2] already in its 35th edition. There is also a version for children's books called Library of Congress Children's Subject Headings (LCCSH).[3] Other well-known subject lists are the Sears List of Subject Headings,[4] the Medical Subject Headings (MeSH)[5] and the Canadian Subject Headings.[6] Several subject lists and thesauri are available for describing the subject content of a resource.[7]

Subject headings effectively two support of Cutter's objectives for catalogues, i.e. 'to enable a person to find a book when the subject is known' and 'to show what the library has on a given subject'. They are very useful, as they can indicate the content of a book, unlike the class number, which specifies only the main subject of the work. Subject headings and their subdivisions provide a systematic way to access the catalogue for the desired information. For example, clicking on one of the subject headings in an electronic catalogue, e.g. Figure 10.2, will bring up a list of items related to that subject.

The assignment of subject headings also enables the retrieval of items based on synonyms and broader terms. As shown in the example below, taken from LCSH, terms can relate to synonyms and to broader and narrower terms.

Subject heading: Trucks
Used for: Lorries (Motor vehicles)
Broader topic: Commercial vehicles
Narrower topic: Caterpillar trucks

10.2 Steps for assigning subject headings

Subject analysis is broken into the assignment of classification numbers and subject headings. The first step is to examine the work. In this case the table of contents, the introduction, the text itself and possibly external resources are important in identifying

DF77   Mahaffy, J. P. (John Pentland), 1839-1919.
.M212   Greek life and thought from the age of Alexander to the Roman
1976   conquest / by J. P. Mahaffy. - New York : Arno Press, 1976. - xxxviii, 600
        p. ; 21 cm. - (History of ideas in ancient Greece)

            Reprint of the 1887 ed. published by Macmillan, London.
            Includes bibliographical references and index.

            ISBN 0 405 07318 6

            1. Hellenism.
            2. Greece--Social life and customs.
            3. Greece--Civilization--To 146 B.C.   Subject headings
            I. Title   II. Series

Figure 10.1 Subject headings in a card catalogue

Personal Name	Mahaffy, J. P. (John Pentland), 1839-1919.
Main title	Greek life and thought from the age of Alexander to the Roman conquest / by J. P. Mahaffy.
Published/Created	New York : Arno Press, 1976.

Description
xxxviii, 600 p. ; 21 cm.

ISBN
0405073186

LC classification
DF77 .M212 1976

Subjects
Greece--Social life and customs.
Greece--Civilization--To 146 B.C.   Subject Headings
Hellenism.

Notes
Reprint of the 1887 ed. published by Macmillan, London.
Includes bibliographical references and index.

Figure 10.2 Subject headings in LC's electronic catalogue

the topics of the work. The next step is the choice of several keywords that could represent the subject. Finally, these keywords should be used as a starting point to identify the appropriate authorized headings from the subject headings list.

For example, for the book *Auto electricity and electronics* by James E. Duffy, keywords like 'car', 'electricity' and 'electronics' come first to mind, relying solely on the title. The matching LCSH are 'Automobiles–Electric equipment' and 'Automobiles–Electronic equipment'.

How many subject headings should be used? This is something that cannot be answered directly or by a single number. The subject expert should assign one or more subject headings that best summarize the overall content of the work (Ganendran and Farkas, 2007). The chief aim is to provide access to the most important topics of the work and effectively support retrieval of the work.

Subject heading lists should be used consistently across the collection. This will support the retrieval of works gathered under the same designated terms.

10.3   Library of Congress Subject Headings

The LCSH list is maintained by the LC. It is very popular even in libraries which do not use the LCC. The first edition of LCSH, called *Subject Headings used in the Dictionary Catalogues of the Library of Congress*, appeared in parts in print form between 1909 and 1914.[8] It is currently in its 35th edition and contains headings established by the LC. Changes and additions to the subject headings appear online on the LC's website as they are approved.

LCSH comes in print form in six volumes, known as the *red books* (LCSH, 2013). It is also available on the Classification Web (classificationweb.net), which contains the most current version of the subject headings. The Classification Web is updated weekly,[9] and therefore the most effective way to access the latest version of LCSH is through the subscription-based service. LCSH is, basically, a standardized indexing language, and so libraries should conform to its rules of application, which are discussed in the next sections.

10.3.1   LCSH structure

LCSH is an alphabetical listing of headings with cross-references between the headings. Figure 10.3 and 10.4 show two excerpts from LCSH. Subject headings start with a capital letter and may consist of one or several words. Usually one-word headings are nouns, e.g. 'Goats', 'Trucks', 'Transducers', etc. Concepts are normally named in the singular and objects in the plural, though exceptions may be found. Multiple-word subject headings may represent a single concept or multiple concepts. Subject headings with multiple words are usually adjectival phrases or, occasionally, prepositional phrases. Headings may be in direct or inverted word order, e.g. 'Transistor television receivers', 'Education, Higher', 'Life and death, Power over'.

The authorized headings are in bold letters. For example, the headings 'Ability, Influence of age on' and 'Labyrinths', in Figures 10.3 and 10.4, are usable headings.

Ability, Influence of age on *(May Subd Geog)*

    UF   Age and ability

            Age factors in ability

    BT   Mind and body

    RT   Age and employment

    NT   Abstraction--Age factors

            Cognition--Age factors

            Language acquisition--Age factors

            Memory--Age factors

            Mental age

Ability, Musical

    USE Musical ability

Ability, Social

    USE Social skills

Figure 10.3 Excerpt from LCSH

Labyrinths *(May Subd Geog)*

    UF   Mazes

    NT   Maze gardens

            Maze puzzles

            Maze tests

   -Religious aspects

   --Buddhism, [Christianity, etc.]

Figure 10.4 Excerpt from LCSH

Strings that are not emboldened like 'Ability, Social' should not be used. In these instances the heading to be used instead is indicated with the *USE* reference. For instance instead of 'Ability, Social' the heading 'Social skills' must be used. The heading 'Social skills' is emboldened in another place in the alphabetical listing of

> **Analysis (Philosophy)**
>
> **Anapausis (The Greek word)**

Figure 10.5 Subject headings with parenthetical qualifiers

headings. *USE* references are in general made for unauthorized and non-preferred terms, synonyms and variants of an authorized or preferred heading.

A parenthetical qualifier is used to remove ambiguity or to make more explicit a word or phrase that is obscure or might be misunderstood (Figure 10.5).

If a resource covers two or more subjects, these subjects have to be listed separately, as shown in the following examples.

Examples

Staging age : the performance of age in theatre, dance, and film / edited by Valerie Barnes Lipscomb and Leni Marshal
Subjects:
  Age in the performing arts
  Ability, Influence of age on

Empires of vision : a reader / Martin Jay and Sumathi Ramaswamy, eds.
Subjects:
  Imperialism
  Postcolonialism
  Visual anthropology

More designators, in addition to the *USE* keyword, are used in LCSH to indicate the relationships between the headings. An equivalence relationship is indicated by the designator *UF* (Used For). For example, 'Age factors in ability' in Figure 10.3 is an equivalent non-authorized heading to the authorized heading 'Ability, Influence of age on'.

BT (Broader Term) and *NT* (Narrower Term) denote broader and narrower terms, indicating hierarchical relationships. *BT* refers to more general subject headings. These headings would be useful if you needed to broaden your topic. Narrower terms refer to more specific headings than the emboldened heading. For example, 'Mind and body' is a broader heading for 'Ability, Influence of age on', which is also included under 'Mind and body' as a narrower term (Figure 10.6). Correspondingly, the narrower heading 'Abstraction-Age factors' of the heading 'Ability, Influence of age on' includes the latter heading as a broader term (Figure 10.7).

The *RT* (Related Term) designator indicates an associative relationship. In essence, it provides ideas of other topics to investigate. Figure 10.8 shows the 'Age and employment' subject heading, which is a related topic to the 'Ability, Influence of age on' shown in Figure 10.3.

Mind and body *(May Subd Geog)*

...

   NT   Ability, Influence of age on

Figure 10.6 NT (Narrower Term) reference in LCSH

Abstraction

...

  -Age factors *(May Subd Geog)*

    …

      BT   Ability, Influence of age on

Figure 10.7 BT (Broader Term) reference in LCSH

Age and employment *(May Subd Geog)*

   UF   Employment and age

   BT   Employment (Economic theory)

   RT   Ability, Influence of age on

        Child labor

        Post-retirement employment

   NT   Career changes

        Life span, Productive

        Retired military personnel--Employment

        Retirement age

  -United States

Figure 10.8 RT (Related Term) reference in LCSH

The *SA* (See Also) reference provides hints for finding information related to your topic within other subject headings. Figure 10.9 shows an *SA* reference from 'Sports museum' to the subdivision 'Museum' of individual sports. The example guides us on how to use the related subject headings.

Sports museums *(May Subd Geog)*

   BT   Museums

   SA   *subdivision* Museums *under individual sports*,

         e.g. Soccer--Museums

Figure 10.9 SA (See Also) reference in LCSH

The existence of hierarchical references (*BT* and *NT*) and cross-references (*RT* and *SA*) provides the ability to systematically find broader and narrower headings and to navigate the catalogue efficiently, no matter what the level at which one enters the hierarchy.

10.3.1.1   Topical subdivisions

A subject heading may be further subdivided, as seen in Figures 10.4 and 10.7 above. The valid subdivisions are also in bold type. For instance, 'Labyrinths' is subdivided into 'Religious aspects', which is further analysed into 'Buddhism, [Christianity, etc.]'. The subdivisions can be combined with the main heading using dashes, as in the following example, in this way providing more descriptive headings.

Labyrinths--Religious aspects
Labyrinths--Religious aspects--Buddhism
Labyrinths--Religious aspects--Christianity

These subdivisions are called *topical* or *subject* subdivisions and are enumerated under the main subject headings. The main headings and their subheadings are shown already merged in the online version of LCSH, as in the above example, and can be copied directly to the bibliographic record.

Examples

Walking a sacred path : rediscovering the labyrinth as a spiritual tool / Lauren Artress
Subjects:
   Labyrinths--Religious aspects
   Meditations
   Spiritual life

Developing the musician : contemporary perspectives on teaching and learning / edited by Mary Stakelum
Subjects:
   Music--Instruction and study--Psychological aspects
   Musical ability

10.3.1.2   Geographic subdivisions

Subject headings and their authorized subdivisions may be followed by the designation *(May Subd Geog)* (see Figures 10.3 to 10.9 above). This is known as *geographic subdivisions* and it means that the heading may be subdivided geographically, i.e. followed by a place name. Certain headings are followed by the *(Not Subd Geog)* designation, which means that the LC has decided not to allow subdivisions by place. Headings or subheadings which do not include either designation have not yet been considered for geographic subdivision and thus cannot be subdivided accordingly.

> Ability, Influence of age on--Australia
> Ability, Influence of age on--Germany--North Rhine--Westphalia
> Labor supply--Middle East
> Medicine and the humanities--Germany

The place names currently in use (e.g. Italy and not Italia) should be used in those headings that may be divided geographically.

Example

> Age discrimination : mitigating risk in the workplace / co-authors: P. Thew, K. Eastman, J. Bourke
> *Subjects:*
>   Age discrimination--Australia
>   Retirement age--Law and legislation--Australia
>   Ability, Influence of age on--Australia

The construction of geographical subdivisions follows a few uncomplicated rules. Countries or larger areas, such as continents or other large geographical areas, are added directly to the heading. This is also true for US states, Canadian provinces and constituent countries, e.g.:

> Mineral industries--Japan
> Mineral industries--Latin America
> Mineral industries--Europe
> Mineral industries--Southeast Asia
> Mineral industries--Ireland
> Mineral industries--Idaho
> Mineral industries--Pennsylvania
> Mineral industries--Québec (Province).

Cities and other geographical areas in a country or in a US state or in a Canadian province must be preceded by the country or state or province name, e.g.:

> Mineral industries--Serbia--Bor Region
> Mineral industries--Slovakia--Slovak Ore Mountains

Mineral industries- -Russia (Federation)- -Siberia
Mineral industries- -France- -Lorraine
Mineral industries- -Georgia- -Atlanta
Education- -New York (State)- -Erie County
Education- -New York (State)- -New York
Mineral industries- -Québec (Province)- -Montréal Region

There are a few exceptions to the above rules, e.g. Vatican City, Jerusalem, Falkland Islands, which are added directly after the heading, e.g.:

Research institutes- -Vatican City
Christians- -Jerusalem
Postal service- -Falkland Islands

It is also possible to divide a subject geographically and to further add one of the subheadings available for that heading, e.g.:

Mineral industries- -United States- -Safety measures
Nonmetallic minerals- -Québec (Province)- -Safety measures

In some cases, only the subheadings are allowed to be subdivided geographically (Figure 10.10), whereas in other instances both a heading and their subheadings can be subdivided geographically (Figure 10.11).

Only the subheading is allowed to be subdivided in headings which follow the paradigm of Figure 10.10, e.g.:

Mineral metabolism- -Disorders- -Europe

Based on the pattern of Figure 10.11, both of the following headings are correct. In the first instance, the main heading is subdivided, while in the second case the subheading is subdivided.

Radio, Military- -Chile- -Law and legislation
Radio, Military- -Law and legislation- -Chile

Mineral metabolism

   ...

   -Disorders *(May Subd Geog)*

Figure 10.10 Only the subheading may be divided geographically

---

Radio, Military *(May Subd Geog)*

   ...

   -Law and legislation *(May Subd Geog)*

Figure 10.11 Heading and subheading may be divided geographically

Academic libraries *(May Subd Geog)*

  ...

  -Administration

  --Contracting out *(May Subd Geog)*

Figure 10.12 Heading and only some subheadings may be divided geographically

Figure 10.12 illustrates a case where a first-level subheading cannot be divided geographically, but its subdivision and the main heading may be divided geographically. This means that the following headings are acceptable, but the place name cannot be interposed between 'Administration' and 'Contracting out', as the subheading 'Administration' cannot be subdivided geographically.

Academic libraries- -Administration- -Contracting out- -United States
Academic libraries- -United States- -Administration- -Contracting out

Example

Academic librarians as emotionally intelligent leaders / edited by Peter Hernon, Joan Giesecke, and Camila A. Alire
Subjects:
   Academic librarians- -Psychology
   Emotional intelligence
   Leadership
   Academic libraries- -Administration

10.3.1.3   Free-floating subdivisions

Listing all of the subdivisions available for each heading could lead to several additional headings and it would increase the size of the already large LCSH volumes. *Free-floating* subdivisions[10] solve this problem. They are recurring concepts, grouped in a single list, that can be added to other headings. They also constitute a separate list in the red books. They look like regular headings (Figure 10.13) but include one or two dashes in front of each heading. This indicates that free-floating subdivisions have to be affixed to another subject heading. In other respects, they look like regular subject headings, including notes and other designators.

In the following examples the concepts 'Bibliography', 'Periodicals', 'Reviews' and 'Directories' are free-floating subdivisions attached to the heading 'Academic libraries' and its subheadings. 'Book lists' is a subheading of 'Academic libraries' and 'California' is a geographical subdivision.

-Bibliography

    Use as a form subdivision under subjects for works consisting of bibliographies about the

    subject. Use under names of individual persons and corporate bodies for lists of works by or

    about the person or corporate body.

    UF   -Bibliographies

         -Lists of books

    NT   -Bibliography of bibliographies

         -Bio-bibliography

        …

--Catalogs

        …

--Early

Figure 10.13 Part of the LCSH free-floating subdivisions

    Academic libraries--Bibliography
    Academic libraries--Book lists--Periodicals
    Academic libraries--Book lists--Reviews
    Academic libraries--California--Directories
    Literature--Translations into Chinese--Periodicals
    Literature--Translations into English--Bibliography

The free-floating subdivisions can also be subdivided, e.g. 'Catalogs' is a sub-division of 'Bibliography'. This is indicated by the double dash in front of the second-level subdivision. This means that it can be used only in conjunction with 'Bibliography', e.g.:

    Academic libraries--Bibliography--Catalogs
    Academic libraries--California--Bibliography--Catalogs
    Literature--Translations into Chinese--Bibliography--Catalogs

Some free-floating subdivisions may be even subdivided geographically, as seen in Figure 10.14.

Further, several subjects are found both as a subject heading and as a subheading within a heading and as a free-floating subdivision. For example, 'Bibliography' is a subject heading, a subheading and a free-floating subdivision. 'Biological control' is a subheading of 'Aphids' and 'Insect pests' and a free-floating subdivision. Hence, when reading a joined subject heading, you cannot be sure of how it was formed and this may be confusing, e.g.:

-**Biological control** *(May Subd Geog)*

  …

-**Children's use** *(May Subd Geog)*

  …

Figure 10.14 Free-floating subdivisions which may be subdivided geographically

Heading--subheading:	Bible--Bibliography
Heading--subheading:	Bibliography--Methodology
Heading--subheading-- free-floating subdivision:	Bibliography--Methodology-- Bibliography

In general, free-floating subdivisions act as auxiliary classification tables and it needs some practice to become familiar with their application (Broughton, 2004).

Examples

Bibliography and indexing : a basic guide / edited by Reuben Musiker
Subjects:
  Bibliography--Methodology
  Indexing

Bible skills, drills, & thrills : leader guide, a fun-filled Bible skills curriculum for grades 4-6, green cycle / writers, Pam Keith . . . [et al.]
Subjects:
  Bible--Study and teaching (Elementary)
  Bible--Children's use
  Christian education--Activity programs
  Bible crafts

10.4   Children's Subject Headings

The Children's and Young Adults' Cataloging Program (CYAC), formerly called the Annotated Card Program (AC Program), provides a list of headings tailored to the needs of juvenile titles.[11] The Library of Congress initiated the AC Program in 1965 with the purpose of providing easier subject access to children's and young adults' materials. Basically, certain LCSH and subdivisions have been modified for younger and less-sophisticated readers. They have the same arrangement as regular subject headings but use easier and more understandable terms. As seen in Figure 10.15, less-formal and more familiar words are used to describe subjects. For example, instead of 'Caliphs' and 'Empresses' words like 'Kings' and 'Queens' should be used. Children's Subject Headings are also available through the Classification Web.

Kings, queens, rulers, etc.

    UF   Caliphs

            Chiefs, Indian

            Emperors

            Empresses

            Indian chiefs

            Monarchs

            …

    BT   Heads of state

    RT   Dictators

            Presidents

            Prime ministers

            Statesmen

Figure 10.15 Excerpt from the Children's Subject Headings

LCSH	*Children's Subject Headings*
Cyclists	Bicyclists
Enuresis	Bedwetting
Peromyscus	White-footed mouse
Pholcidae	Daddy longleg spiders
Plecotus auritus	Long-eared bat

Figure 10.16 LCSH and their respective Children's Subject Headings

    A few comparative examples between the two lists of subjects are shown in Figure 10.16.

10.5 Sears List of Subject Headings

The first edition of the Sears List of Subject Headings was published in 1923 at the Nova Southeastern University in Fort Lauderdale, Florida by Minnie Earl Sears. It is now in its 21st edition (Sears, 2014). Earlier versions were published under the title *List of*

Subject Headings for Small Libraries[12] and the list was compiled from lists used in nine representative small libraries. The Sears List is derived from the LCSH but contains more general and common terms, which Minnie Earl Sears believed would be more useful for small libraries. It is not meant to be as complete a list as possible, but to include the subject headings most likely to be useful for small and school libraries. This simplifies the process of establishing subject headings for a resource.

As seen in Figure 10.17, the format is similar to that of LCSH. The *USE*, *UF*, *BT*, *NT*, *SA* and *RT* designators are also present in the Sears List Subject Headings. Older versions used *see* and *see also* references. The authorized subject headings are in bold type and may also include some notes. Additionally, they cite the corresponding Dewey numbers, e.g. 353.4 is the Dewey number for 'Public administration of justice'. Further, the subject headings may be subdivided by name of place. Other types of subdivisions are included, in merged form, with the main heading, e.g. 'Plants—Analysis'.

Sears subject headings are published in one volume. The principles of the Sears List are presented in the first part of the volume. The reference designators and other structural conventions are also explained in the first part. The rest of the volume enumerates the subject headings. Overall, anyone who is familiar with the structure of LCSH could straightforwardly make use of the Sears List of Subject Headings.

10.6   Summary

Subject headings are controlled lists of terms or phrases used to describe the subjects of items. They facilitate access to resources by subject, as they define a set of additional topics included in an item, in contrast to classification, which deals only with the main subject. The best-known list is the LCSH. Other subject lists, like the Children's Subject Headings and the Sears List of Subject Headings, are derived from LCSH. Subject headings may be subdivided to provide more tailored representation of the topics in the resource. References within the lists make possible the location of narrower, broader and related topics. This allows the identification of the most appropriate terms, no matter what the starting point may be.

10.7   Review questions

1 What is the purpose of subject headings?
2 Name some subject heading lists.
3 Describe briefly the steps for assigning subject headings.
4 Describe the purpose of the designator *USE* in LCSH.
5 Describe the purpose of the designators *BT*, *NT*, *RT* in LCSH.
6 Describe the purpose of the designator *RA* in LCSH.
7 What is a geographical subdivision in LCSH?
8 What are the free-floating subdivisions in LCSH?
9 Describe briefly how Children's Subject Headings differ from LCSH.
10 What do you know about the Sears List of Subject Headings?

Administration of criminal justice (May subdiv. geog.) **353.4**

    UF   Criminal justice, Administration

           of

    BT   **Administration of justice**

           Criminal law

    NT   **Amnesty**

           Clemency

           Corrections

African American artists (May subdiv. geog.) **709.2; 920**

    Use for materials on several African Americans artists.

    UF   Afro-American artists

    BT   **Artists**

           Black artists

    RT   **African American art**

Narcotic traffic

    USE **Drug traffic**

Plants—Analysis   **572**

    UF   Plant chemistry

Ohio—History—Societies   **977.106**

    BT   History—Societies

Figure 10.17 Excerpts from the Sears List of Subject Headings

10.8   Practical exercises

In the following exercises you may use the LCSH PDF files[2] or Classification Web (http://classificationweb.net).

1 Specify some narrower topics for the subject heading 'Earth scientists'.

2 Relate the subject heading 'Music printing' with 'Printing' and 'Music title pages' with the aid of the *BT* and *RT* designators.

3 Which authorized subject heading is used for 'Aged automobile drivers'?

4 You have a book on Drop-ear Norwich terriers. Select some appropriate subject heading(s).

5 'Control systems' is a subdivision of the subject heading 'Drone aircraft *(May Subd Geog)*'. Which of the following subject headings are correct?

   a. Drone aircraft--Control systems

   b. Drone aircraft--Paris

   c. Drone aircraft--France--Paris--Control systems

   d. Control systems--Drone aircraft

   e. Drone aircraft--Control systems--Illinois

   f. Drone aircraft--Illinois--Control systems.

6 Given the heading 'Music in the theater *(May Subd Geog)*', create appropriate geographical subdivisions for the following places:

   a. Italy

   b. Madrid

   c. Québec (Province)

   d. Pennsylvania.

7 Create the appropriate headings by using the free-floating subdivisions 'Bibliography' and 'Periodicals' and the subject headings 'Older anthropologists' and 'Kabyle language'.

8 Given the subject heading

     Endorphins *(May Subd Geog)*

     . . .

     - Receptors,

which of the following headings are correct?

   a. Endorphins--Receptors--Denmark

   b. Endorphins--Denmark--Receptors

   c. Endorphins--Denmark--Receptors--Periodicals

   d. Endorphins--New York (State)--New York--Periodicals

   e. Endorphins--Periodicals

   f. Endorphins--Receptors--Periodicals

   g. Endorphins--Periodicals--Receptors

9 Select some appropriate subject heading(s) for the book 'Keeping a family cow: a complete Guide to raising cows and producing dairy products for home use / Joann Sills Grohman'.

10 Select some appropriate subject heading(s) for the book 'Classification of East African crops / John O. Kokwaro'. Note that '-Classification' is a free-floating subdivision.

10.9 References

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3. Children's Subject Headings (CSH) List, http://www.loc.gov/aba/cyac/childsubjhead.html.
4. Sears List of Subject Headings, http://www.ebscohost.com/public/sears-list-of-subject-headings.
5. Medical Subject Headings, http://www.nlm.nih.gov/mesh/.
6. Canadian Subject Headings (CSH), http://www.bac-lac.gc.ca/eng/services/canadian-subject-headings/Pages/canadian-subject-headings.aspx.
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8. Introduction to LCSH, http://www.loc.gov/aba/publications/FreeLCSH/lcshintro.pdf.
9. Library of Congress Subject Headings Approved Lists, http://www.loc.gov/aba/cataloging/subject/weeklylists/.
10. Free-floating subdivisions, http://www.loc.gov/aba/publications/FreeLCSH/SUBDIVISIONS.pdf.
11. Children's Subject Headings, http://www.loc.gov/aba/publications/FreeLCSH/CHILDRENS.pdf.
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MARC 21: digital formats for cataloguing and classification data

11

11.1   Introduction

In the preceding chapters we have examined the standards for describing the physical characteristics of resources and their subjects. In modern electronic catalogues bibliographic data are encoded using the *MARC* format.[1] MARC stands for MAchine-Readable Cataloging and it refers to the ability of computers to read and interpret the data in the *cataloguing record*.

A bibliographic record typically includes:

1 a description of the item
2 main entry and added entries
3 subject headings
4 the classification or call number.

MARC records often contain much information in addition to these four categories, e.g. LCCN, date and time of latest transaction etc. The records are encoded using specific tags and symbols, which are examined later in the chapter. The form and the type of the encoded data depend on the cataloguing and classification standards used. For instance, the notation of classification numbers differs in LCC and DDC. Book descriptions follow different conventions in AACR2 and RDA.

The MARC standard is actually a set of digital formats, initially developed in the 1960s by Henriette Avram at the LC (Avram, 1975). Different flavours of the standard followed its development, e.g. USMARC, AUSMARC, CANMARC, UNIMARC etc. The current generation of the system is known as MARC 21 (Mukhopadhya, 2007; Fritz and Fritz, 2003) and results from the combination of the USMARC and CANMARC versions.

There are actually five MARC 21[1] communication formats:

- MARC 21 format for Bibliographic Data
- MARC 21 format for Authority Data
- MARC 21 format for Holdings Data
- MARC 21 format for Classification Data
- MARC 21 format for Community Information,

dealing with the representation and exchange of bibliographic, authority, holdings, classification and community information data in machine-readable form. The formats

for bibliographic data and for authority data are also available in a few other languages.[2] MARC 21 is often referred to simply as MARC. In this chapter we introduce the format for bibliographic data.[3]

11.2   Fields, tags, indicators and subfield codes

A MARC record contains the information about a resource, fragmented into pieces marked with special tags. Each bibliographic record is logically divided into *fields*. There are fields for the author, the title information, the subjects, etc. A MARC record is thus a collection of fields.

Specific 'signposts' exist in front each piece of bibliographic information. The important 'signposts' are *tag*, *indicator*, *subfield* and *subfield code*. A *tag* is a three-digit code denoting a field. This number represents the kind of data, i.e. the field, that follows. For example, the tag 100 marks the author field. There are several tags in MARC, but only a few are used recurrently in the records. A list of some common tags is given in Figure 11.1.

Figure 11.2 shows the author field marked with the 100 tag. The single digit after the three-digit tag is an *indicator* and is not part of the tag. Tags are always the first three digits and are followed by two character positions. When an indicator position is

010	Library of Congress Control Number (LCCN)
020	International Standard Book Number (ISBN)
100	Personal name main entry
245	title information
250	edition
260	publication information
300	physical description
440	series statement/added entry
520	annotation or summary note
650	topical subject heading
700	personal name added entry (joint author, editor, or illustrator)

Figure 11.1 Common MARC 21 tags

100 1	ǀa Rawlins, Claudia

Figure 11.2 Author field in MARC

not used, that indicator is referred to as 'undefined' and the character position is left blank. Each of the two indicators is a digit between 0 and 9 and it has a special meaning for the data following it. For example, value 1 for the first indicator after tag 100 means that the personal name entry element is a 'single or multiple surname formatted in inverted order or a single name without forenames that is known to be a surname'.[4] The second indicator is not defined for this tag.

Figure 11.3 shows the *Title Statement* field marked with the 245 tag.[5] Number 14 appears to be a two-digit number, but these are actually two distinct one-digit indicators. The value 1 of the first indicator denotes that the desired title added entry is the same as the title in field 245. The value 4 of the second indicator specifies the number of nonfiling characters, i.e. the characters 'The '.

Some of the tags may be repeated within a record. This is indicated by the letter *R* after the name of the tag. *NR* means that the tag is non-repeatable. Figure 11.4 shows some examples of Repeatable and Non-Repeatable tags. Figure 11.5 shows two ISBN fields included in a single MARC record for the same book, with their respective qualifications and terms of availability.

Fields are further subdivided into smaller pieces of related data, called *subfields*, indicated with *subfield codes*. Each subfield is assigned a two-character code consisting of the delimiter symbol, e.g. '$' or '|' or '‡', and a lowercase letter or a number for the subfield code. The '|a' subfield code in the 020 field indicates the ISBN of the book and the '|c' subfield code marks the terms of availability. As observed in Figure 11.6, it is possible to repeat some of the subfields within a field. This possibility is indicated with the letter *R* after the subfield's code

---

24514 |a The images of time : |b an essay on temporal representation / |c Robin Le Poidevin.

Figure 11.3 Title statement field in MARC

---

020 - International Standard Book Number (R)

100 - Main Entry-Personal Name (NR)

245 - Title Statement (NR)

260 - Publication, Distribution, etc. (Imprint) (R)

Figure 11.4 Repeatable and Non-Repeatable tags

---

020 |a 0521895820 (hbk.) : |c £50.00

020 |a 9780521720076 (pbk.) : |c £18.99

Figure 11.5 Examples of ISBN fields in MARC

$a - Personal name (NR)

$b - Numeration (NR)

$c - Titles and words associated with a name (R)

$0 - Authority record control number (R)

$8 - Field link and sequence number (R)

Figure 11.6 Selected subfield codes of the 100-Main Entry-Personal Name field

1001 |a REYNOLDS, James, |c Right Hon. Sir, |c Lord Chief Baron of the Court of

Exchequer.

1001 |a JOHNSTON, Christopher Nicholson, |c Sir, |c Lord Sands.

Figure 11.7 Repeatable subfields in the 100 field of different MARC records

and name. *NR* denotes that a subfield cannot be repeated. Figure 11.7 shows two
100 fields where the subfield with code '|c' is repeated. These 100 fields come from
different books, though, as the 100 field is a non-repeatable field. Thus, both fields
and subfields may be repeated, but there is no dependency between them, i.e.
repeatable subfields may exist in non-repeatable fields or repeatable fields may con-
tain non-repeatable subfields.

11.3   Record structure and display

A MARC record starts with the *leader*, which is 24-character position field. The leader
consists of data elements that provide information for the automated system proces-
sing the record. The data elements contain numbers or coded values and are identified
by relative character position. Characters 00 to 04, for example, provide the record
length.

The next component of the record is the *directory*, which is a series of entries that
contain the tag, length and starting location of each variable field within a record. Each
entry in the directory is 12 character positions in length. For example, in the directory
entry 050001100054 the characters 050 indicate the tag, the sequence 0011 the length
of the 050 field and the rest of the characters indicate the starting position of the 050
field within the record.

The *control fields* follow next in the record. They begin with the digit 0 and codify
information such as the date and time of later transactions. The 008 is referred to as a
fixed field or *fixed-length field* and has 40 character positions which carry encoded
information about the record.

The *variable fields* indicated by the 111 to 999 three-digit tags are next in the record. As we have seen earlier, these fields carry typical cataloguing and classification data.

The display of MARC records depends on the OPAC used. Figures 11.8 and 11.9 show the same record as displayed in the British Library's and the LC's OPACs. Some of the data are identical, e.g. the 245 field, but there are differences in others, e.g. the 260 field. The data in computerized catalogues which are encoded in MARC format are entered by cataloguers and classifiers who might transcribe different information. MARC is an accommodating format, adaptable to the variety of data and the intentions of the cataloguing and classification staff. The main point to highlight here is that the structure of both records is the same, so they can both be shared among MARC 21-compliant OPACs.

LDR	am a2200277ua4500
001	011293907
008	021209s2002 enk ‖ 000 ‖eng
015	|a GBA221225 |2 bnb
020	|a 0130320722 : |c No price
035	|a (UkCU)c900528462
040	|a UkCU |d Uk
08204	|a 005.133 |2 21
1001	|a Van der Linden, Peter.
24510	|a Just Java 2 / |c Peter van der Linden.
250	|a 5th ed.
260	|a Upper Saddle River, N.J. ; |a London : |b Prentice Hall PTR, |c 2002.
300	|a xxxv, 1098 p. : |b ill. ; |c 23cm. + |e 1 computer laser optical disk (4.75 in.)
4901	|a The Sun Microsystems Press Java series
500	|a Includes index.
650 0	|a Java (Computer program language)
830 4	|a The Sun Microsystems Press Java series

Figure 11.8 MARC record display in British Library catalogue (http://catalog.bl.uk/)

```
000   01003cam a22002657a 4500

001   12710216

005   20030717144346.0

008   020319s2002 caua 001 0 eng

010   __    |a 2002275749

020   __    |a 0130320722

040   __    |a DLC |c DLC |d DLC

050   00    |a QA76.73.J38 |b V3625 2002

082   00    |a 05.13/3 |2 220

100   1_    |a Van der Linden, Peter.

245   10    |a Just Java 2 / |c Peter van der Linden.

250   __    |a 5th ed.

260   __    |a Palo Alto, Calif. : |b SunSoft Press, |c c2002.

300   __    |a xxxv, 1098 p. : |b ill. ; |c 24 cm. + |e 1 CD-ROM (4 3/4 in.)

490   1_    |a Java series

500   __    |a Includes index.

650   _0    |a Java (Computer program language)

830   _0    |a Java series (Mountain View, Calif.)

906   __    |a 7 |b cbc |c origcop |d 2 |e ncip |f 20 |g y-gencatlg

925   0_    |a acquire |b 2 shelf copies |x policy default

955   __    |a pv14 2002-03-19 to ASCD |a jf00 2002-03-22 |c jf05 2002-05-28 to subj. |a jf00 2003-
              05-20; |c jf03 2003-05-29 to Subj.; |d jf04 2003-06-04 to S.L. |e jf12 2003-06-05 to
              Dewey |a aa05 2003-07-17
```

Figure 11.9 MARC record display in Library of Congress catalogue (http://catalog2.loc.gov)

The field 040 indicates, in codified form, the organization that created the original record. The string 'UkCU', for example, in field 040 of Figure 11.8 corresponds to University of Cambridge[6] and 'DLC' in field 040 of Figure 11.9 to Library of Congress.[7]

11.4   AACR2 in MARC

In Chapter 3 of this book we discussed the process of cataloguing books using the AACR2 standard. Figure 11.10 shows a bibliographic record in AACR2. Figure 11.11 shows the same record in MARC 21 format. Only the part of the record that includes the descriptive cataloguing data is shown.

Essentials of sociology : a down-to-earth approach / James M. Henslin. − 3rd ed. − Boston ;

London : Allyn and Bacon, 2000. − xxix, 475 p. : ill. (some col.), col. maps, ports. (some

col.) ; 26 cm.

Previous ed: 1998.

One 4 3/4 in. computer optical disk in pocket attached to inside front cover.

Includes bibliographical references and index.

ISBN 0205292992

Figure 11.10 A bibliographic record in AACR2

---

020 |a 0205292992 (pbk.) : |c No price

020 |a 0205316905

1001 |a Henslin, James M.

24510 |a Essentials of sociology : |b a down-to-earth approach / |c James M. Henslin.

250 |a 3rd ed.

260 |a Boston ; |a London : |b Allyn and Bacon, |c c2000.

300 |a xxix, 475 p. : |b ill. (some col.), col. maps, ports. (some col.) ; |c 26 cm.

500 |a Previous ed.: 1998.

500 |a One 4 3/4 in. computer optical disk in pocket attached to inside front cover.

504 |a Includes bibliographical references and indexes.

Figure 11.11 The same bibliographic record in MARC

The title and statement of responsibility are recorded under the 245 tag. As observed, the AACR2 punctuation is retained in the digital record. The other title information and the statement of responsibility are marked with subfield codes. The edition is encoded in the 250 field.

The place of publication, the publisher and the date of publication are contained in the 260 field and indicated by the appropriate subfields. This information corresponds to area 4 of AACR2. Again, all the punctuation marks and the spaces are maintained in the MARC record. The 300 field is used for the physical description, i.e. the extent of the item, other physical details and the dimensions.

The notes are encoded separately in the 500 field, which is a repeatable field. Information on the presence of one or more bibliographies goes under the 504 field, however. The standard number and terms of availability are encoded under the repeatable field 020. The main entry, which is a personal name in our example, is entered under the 100 field.

Several additional fields are available for cataloguing data that are used as needed. For example, a uniform title is encoded under 130.

11.5   RDA in MARC

RDA is the new standard for descriptive cataloguing which is based on the FRBR conceptual model. Chapters 5 and 6 in this book cover FRBR and RDA, respectively. The RDA attributes for work, expression, manifestation and item have to be encoded in MARC 21 in digital catalogues. New MARC fields have been introduced to accommodate some RDA attributes,[8] e.g. the 336 field for content type and the 337 field for media type.

The RDA toolkit and the LC provide certain examples of RDA data codified in MARC.[9, 10] As explained in Chapter 6, most texts on RDA use the AACR2 punctuation conventions to present the descriptive data. This approach is also applied in RDA Toolkit examples. Table 11.1 shows some examples of RDA attributes encoded in MARC. Abbreviations are spelled out in these examples, but otherwise the data are similar to the AACR2 examples shown in the previous section.

The shift to cataloguing with RDA is gaining ground. The British Library provides MARC records in RDA for its new acquisitions. Figure 11.12 shows an example of a

Table 11.1 Selected RDA attributes in MARC

RDA attribute	MARC field
2.3.2 Title proper 2.4.2 Statement of responsibility relating to title proper	245 10 |a Essentials of sociology : |b a down-to-earth approach / |c James M. Henslin.
2.15 Identifier for the manifestation	020 |a 0205292992 (paperback)
3.4 Extent of text	300 |a viii, 151 pages ; |c 27 cm.
6.9 Content type	336 |a text |b txt |2 rdacontent

020	|a 9783642448980 (cased)
020	|a 3642448984 (cased)
020	|z 9783642448997 (eBook)
040	|a YDXCP |c YDXCP |d Uk |e rda
08204	|a 006.74 |2 23
1001	|a Yan, Li, |d 1964 - |e author.
24510	|a Fuzzy XML data management / |c Li Yan, Zongmin Ma, Fu Zhang.
264 1	|a Heidelberg : |b Springer, |c [2014]
300	|a xi, 210 pages : |b illustrations (black and white) ; |c 25 cm.
336	|a text |2 rdacontent
337	|a unmediated |2 rdamedia
338	|a volume |2 rdacarrier

Figure 11.12 Part of a MARC record in RDA

book, with a copyright year of 2014, encoded in RDA. The subfield '|e' of MARC field 040 has the value 'rda', indicating that this record is encoded in RDA. This is further verified by inspecting the 300 field, where full words are used instead of the usual AACR2 abbreviations. The fields 336, 337 and 338, which are used for encoding RDA data, are also present.

11.6   LCC, DDC and LCSH in MARC

The LCC number is contained under the 050 field. The first indicator 0 means that the class number exists in LC and the second indicator 0 denotes that the data are assigned by LC. The '|a' subfield code is used for the classification number and is a repeatable subfield. The '|b' subfield denotes the item number and is a non-repeatable subfield. In Figure 11.13, the LCC number is 'D16.25' and the item number is '.F33 2000'.

The DDC number is transcribed under the 082 field, which is a repeatable field. The first indicator 0 means that the number is from the full DDC version and the second 0 denotes that the data are assigned by LC. The '|a' subfield is used for the Dewey number and the '|2' indicates the edition of Dewey. The Dewey number is 907 and the edition of Dewey is 21 in our example.

The subject headings are transcribed under the repeatable 650 field. In the example in Figure 11.13 for tag 650, the first indicator is left empty, thus it is undefined. The second indicator 0 indicates that the headings are in LCSH. The subfield codes

05000	|a D16.25 |b .F33 2000
08200	|a 907 |2 21
650 0	|a History |x Study and teaching |v Congresses.
650 0	|a Human ecology |v Congresses.

Figure 11.13 LCC, DDC and LCSH in MARC

are used to indicate the kind of subdivision. For example, '|z' is the code for the geographic subdivision.

11.7 MARCXML

MARCXML is an XML schema based on the MARC 21 standard. It was developed by the LC[11] following the current trend of representing data in XML (eXtensible Markup Language)[12] (Fawcett, Ayers, and Quin, 2012), taking advantage of its efficient information management features.

Figure 11.14 shows part of a MARCXML example. Data in XML are enclosed in nested tagged elements. If you examine the example carefully you will understand that it is essentially an alternative representation of the same data discussed in the previous sections. For instance, the tags, the indicators and the subfield codes are also present in MARCXML. The main advantage of representing the data in this format is that they can be read by any XML-aware computer application and not only by MARC 21-compliant tools. The permitted structure of MARCXML files is formally described as an XML schema.[13] Computer applications rely on this schema to decipher MARCXML data. Essentially, if you provide these two files, i.e. the schema and the MARCXML file, all XML-aware computer software (practically every computer application) can read the information. This improves information shareability and the interoperability of computer applications.

11.8 Summary

This chapter has introduced MARC 21, which is an encoding standard for bibliographic records. MARC records organize the data into fields marked with three-digit tags. Fields are divided into smaller parts marked with subfield codes. The data transcribed in a MARC record follow the punctuation and other conventions of the applied cataloguing and classification standards. An XML version of the standard, called MARCXML, is available. Since XML is the basis of the Semantic Web, MARCXL makes MARC suitable for current computer applications.

```
<collection xmlns="http://www.loc.gov/MARC21/slim">

...

<datafield tag="100" ind1="1" ind2=" ">

        <subfield code="a">Sandburg, Carl,</subfield>

        <subfield code="d">1878-1967.</subfield>

</datafield>

<datafield tag="245" ind1="1" ind2="0">

        <subfield code="a">Arithmetic /</subfield>

        <subfield code="c">

        Carl Sandburg ; illustrated as an anamorphic adventure by Ted Rand.

        </subfield>

</datafield>

<datafield tag="250" ind1=" " ind2=" ">

        <subfield code="a">1st ed.</subfield>

</datafield>

<datafield tag="260" ind1=" " ind2=" ">

        <subfield code="a">San Diego :</subfield>

        <subfield code="b">Harcourt Brace Jovanovich,</subfield>

        <subfield code="c">c1993.</subfield>

</datafield>

...

</collection>
```

Figure 11.14 Part of a MARCXML example

In this chapter, we focused on the MARC 21 format for bibliographic data. The other MARC 21 formats follow the same principles. The data are marked with the suitable tags and subfield codes. Overall, a MARC record is produced by a computer application, which classifiers and cataloguers have to feed with cataloguing and classification data. In that sense, its technical details concern primarily the technical staff of libraries, but anyone with a role in information organization in a library setting should be able to understand its structure.

11.9   Review questions

1 What are the contents of a typical cataloguing record?
2 Which are the five MARC 21 communication formats?
3 What is a field in MARC 21?
4 What is an indicator in MARC 21?
5 What is a subfield in MARC 21?
6 Identify the individual components of the following MARC data:
    1001 |a JOHNSTON, Christopher Nicholson, |c Sir, |c Lord Sands.
    Why is '|c' repeated in the data?

7 What would you transcribe in the 020 field?
8 What is the role of the 245 field?
9 Which fields are for transcribing DDC and LCC numbers in MARC?
10 What is MARCXML?

11.10   Practical exercises

Information for completing the following exercises may be found at http://www.loc.
gov/marc/bibliographic/concise/bdXXX.html, by replacing XXX with the appropri-
ate tag digits.

1 Visit an online catalogue (e.g. catalog.bl.uk or catalog2.loc.gov) and search for information
about your favourite book. Display the book's MARC record and examine it.
2 Transcribe the following data in MARC in the 245 field:
    The emergence of African history at British universities : an autobiographical approach /
edited by Anthony Kirk-Greene.
3 Transcribe the following data in the appropriate MARC field
    9780735611832, paperback
    £29.99
    using:
    a. the AACR2 conventions,
    b. the RDA conventions
4 Adapt the following MARC field to the RDA standard:
    300 |a xviii, 317 p. : |b ill. ; |c 24 cm.
5 Using the 050 and 082 fields, code in MARC:
    a. the DDC number 339 in edition 23, and
    b. the LCC call number HB172.5. A24 2014.

11.11   References

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Metadata

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12.1 Introduction

Metadata is, by definition, *data about other data*. Although the term comes from computer science, data about data have existed from the early days of library science. Classification numbers and subject headings are some notable examples, as they are actually extra data about a resource. But metadata schemes are new, standardized structures, usually expressed in XML (eXtensible Markup Language),[1] which differ from traditional cataloguing standards and are primarily aimed for the Web. Digital resources such as articles, theses, images or other visual materials and educational resources, can be described using certain metadata schemes.

Most of the digital objects are complex and are comprised of multiple files. Metadata plays an important role in the multifaceted description of these objects, increasing the interoperability between software tools and the findability and shareability of the digital objects (Foulonneau and Riley, 2008; Caplan, 2003).

There are several metadata schemes available with different purposes, application areas and degrees of acceptance. In the following sections, we introduce some metadata schemes with different uses to demonstrate their importance and their encoding approaches.

12.2 Dublin Core

Dublin Core[2] (DC) is a metadata scheme for describing digital resources, as well as physical resources such as books, maps, CDs and artworks. It is managed by the DCMI (Dublin Core Metadata Initiative – dublincore.org), which is an open organization managed as a project of ASIS&T (the Association for Information Science and Technology). The name 'Dublin' is attributable to its origin at a 1995 workshop in Dublin, Ohio; 'core' because its elements are broad and generic, usable for describing a wide range of resources. Originally it consisted of 13 elements but later expanded to contain 15 properties. The 13 elements of the DC metadata element set are shown in Figure 12.1.

Each element has a definition, e.g. *Creator* is defined as 'An entity responsible for making contributions to the resource'. More elements, e.g. *accessRights*, *modified*, *dateCopyrighted* etc., have been added, raising the total number of elements to 55.[3] All elements are optional and repeatable for a resource.

DC metadata can be attached to a resource in different ways. The first is in textual form, in the format *Element name = value*, as seen in Figure 12.2.

The second method is by using the tag <meta> in HTML documents, i.e. web pages. Some technical details are omitted, but the main idea is that the content is included in a tag and the name of the element is prefixed with 'DC' (see Figure 12.3).

Title	Format
Creator	Identifier
Subject	Source
Description	Language
Publisher	Relation
Contributor	Coverage
Date	Rights
Type	

Figure 12.1 The DC metadata element set

Title="Metadata for Digital Resources, Implementation, Systems Design and Interoperability"

Publisher="Chandos Publishing"

Creator="Foulonneau, Muriel"

Creator="Riley, Jenn"

Type="Text"

Figure 12.2 DC example in text form

<meta name="DC.Title" content="Metadata for Digital Resources, Implementation, Systems Design and Interoperability" />

<meta name="DC.Publisher" content="Chandos Publishing" />

<meta name="DC.Creator" content="Foulonneau, Muriel" />

<meta name="DC.Creator" content="Riley, Jenn" />

<meta name="DC.Type" content="Text" />

Figure 12.3 DC example in HTML

DC can also be represented in XML (Figure 12.4) in various ways, based on the adopted schema. UKOLN's (United Kingdom Office for Library and Information Networking) XML schema is used in the DCMI's site.[4]

```
    <dc:title>

        Metadata for Digital Resources, Implementation, Systems Design and

Interoperability

    </dc:title>

    <dc:publisher>

        Chandos Publishing

    </dc:publisher>
```

Figure 12.4 Part of a DC example in XML

Regardless of the way the DC elements are represented, this metadata scheme is useful in library contexts. First, cataloguing standards like AACR2 may not be adequate or easy to apply in electronic resources like web pages. Second, DC metadata can be used in conjunction with cataloguing data in electronic catalogues or other library portals to increase the findability of resources. In general, it is an uncomplicated and popular metadata scheme, due to its controlled core set of elements.

12.3   Metadata Object Description Schema

The Metadata Object Description Schema (MODS) is an XML-based bibliographic description schema maintained by the Network Development and MARC Standards Office of the LC with input from users.[5] It has been designed to carry key data elements from a MARC record. MODS has 20 top-level elements (Figure 12.5). Each element includes one or more subelements (Figure 12.6).

MODS is essentially a compromise between the complexity of the MARC format and the extreme simplicity of DC metadata. It is used for describing digital resources or in conjunction with traditional library standards in library or collection management software.

12.4   Text Encoding Initiative

The Text Encoding Initiative (TEI) is a consortium which develops and maintains a standardized scheme for the representation of texts in digital form.[7] It was aimed for use primarily in the humanities, social sciences and linguistics, but it has been widely used by libraries, museums and other organizations or individuals for the digital representation of texts.

The first TEI guidelines appeared in 1990 and the latest version, entitled 'Guidelines for Electronic Text Encoding and Interchange', known as TEI P5, was published

```
<abstract>                                    <originInfo>

<accessCondition>                             <part>

<classification>                              <physicalDescription>

<extension>                                   <recordInfo>

<genre>                                       <relatedItem>

<identifier>                                  <subject>

<language>                                    <tableOfContents>

<location>                                    <targetAudience>

<name>                                        <titleInfo>

<note><originInfo>                            <typeOfResource>
```

Figure 12.5 MODS top-level elements

```
<mods version="3.3">

        <titleInfo>

                <title>Hiring and recruitment practices in academic libraries</title>

        </titleInfo>

        <language authority="iso639-2b">eng</language>

        <abstract>Academic libraries ...</abstract>

        <subject>

                <topic>College librarians</topic>

                <topic>Recruiting</topic>

                <geographic>United States</geographic>

        </subject>

        ...

</mods>
```

Figure 12.6 Part of a MODS XML example[6]

in 2007. The TEI encoding scheme consists of a number of modules, each of which is encoded in XML. Figure 12.7 shows the overall structure of a document in TEI format. Elements like < text > are repeatable. The < teiHeader >[8] includes several subelements, e.g. <titleStmt>, <editionStmt>, <publicationStmt>, < seriesStmt>, which may in turn include other elements (Figure 12.8).

The more elements that are used in a TEI document, the more detailed and complex it becomes. The TEI metadata scheme supports the encoding of a lot of AACR2 cataloguing data, and MARC records have been used for constructing the < teiHeader > section. TEI is an accommodating metadata scheme, applied especially in electronic documents, which can be very complex in structure. Examples of textual materials where TEI has proved to be very useful are journal articles, newspaper articles and electronic theses.

```
<TEI xmlns="http://www.tei-c.org/ns/1.0">

 <teiHeader>     … </teiHeader>

 <text>

  <front>        …         </front>

  <body>         …         </body>

  <back>         …         </back>

 </text>

</TEI>
```

Figure 12.7 Overall structure of a document in TEI

```
<titleStmt>

 <title>Two stories by Edgar Allen Poe: electronic version</title>

 <author>Poe, Edgar Allen (1809-1849)</author>

 <respStmt>

  <resp>compiled by</resp>

  <name>James D. Benson</name>

 </respStmt>

</titleStmt>
```

Figure 12.8 Title statement encoded in TEI[5]

12.5   Encoded Archival Description

Encoded Archival Description (EAD) is a non-proprietary standard for the encoding of finding aids for use in a networked environment. Documentation is hosted by the LC.[9] The current official version is that of 2002, but in May 2014 an update of the scheme was submitted for the approval to the supervising committee. EAD was a cooperative venture, having as a primary aim the ability to present extensive and interrelated descriptive information found in archival finding aids in machine-readable form. A finding aid, in the context of archival science, is a document containing detailed information about a specific collection of papers or records within an archive.

XML is used for the encoding of the data. Typically, an EAD file consists of the three main sections < eadheader >, < frontmatter > and < archdesc >, which contain several nested elements.[10]

The < eadheader > contains elements such as <titlestmt>, <notestmt > and <publicationstmt>. In general, this section contains information about the title, the publication, the creation date, the language etc.

The < frontmatter > includes information on the creation, publication or use of the finding aid, rather than information about the materials being described. Information such as 'processed by', 'date completed' may be found under this element.

The last element, <archdesc >, describes the content, context and extent of a body of archival materials. It may also include administrative and supplemental information that facilitate the use of the materials. Tags like < abstract >, < scopecontent >, < physdesc >, < bioghist > are found inside this element.

A number of repositories have adopted and implemented EAD with varying levels of technical sophistication. In general, it is considered to be a difficult metadata scheme, as it is a rich format and requires expertise in archival description.

12.6   Visual Resources Association Core

Visual Resources Association Core (VRA Core) is a data standard for the cultural heritage community.[11] It supports the description of works of visual culture and their associated images. The schema of the metadata standard and the documentation are maintained in LC.[12] The core elements of the latest version may be used to describe *works*, *images* and *collections*. A work is defined in VRA Core as a unique entity such as an object or event, and an image is a visual representation of a work in either whole or part. Finally, a collection is an aggregate of work or image records. Three primary types of relationships between records are identified in VRA Core:

1 work to work
2 image to work
3 image or work to collection.

These relationships support the formation of more composite structures which eventually allow the representation of complex cultural heritage concepts. Figure 12.9 shows a record for a work.

```
<agentSet>

<display>School of Peter Paul Rubens (1577-1640)</display>

<agent>

<name type="personal" vocab="ULAN" refid="500002921 "dataDate="2006-09-22">Rubens,

Peter Paul</name>

<culture>Flemish</culture>

<dates type="life">

<earliestDate>1577</earliestDate>

<latestDate>1640</latestDate>

</dates>

<dates type="activity">

<earliestDate>1590</earliestDate>

<latestDate>1640</latestDate>

</dates>

<role vocab="AAT" refid="300025136">painter (artist)</role>

<attribution>School of</attribution>

</agent>

</agentSet>
```

Figure 12.9 XML expression for a record for a work[13]

12.7   Summary

Metadata schemes play an important role in the Internet era because the number of digital objects has increased exponentially. Their semantic descriptions, using automatic annotation techniques, will increase their shareability and findability. The development of more sophisticated retrieval and presentation tools will also be possible. There are other metadata schemes in addition to the abovementioned ones, e.g. CDWA,[14] LIDO[15] and some which are supported by LC.[16] Almost all of the available metadata schemes are expressed in XML and they are supported by various software tools. The main advantage of metadata schemes is that they can capture the semantic aspects of digital objects which are difficult to describe with the traditional library standards.

12.8   Review questions

1 What is the purpose of metadata?
2 Briefly describe Dublin Core.
3 What is MODS?
4 Where would you use the TEI metadata scheme?
5 Describe the three main sections of EAD.
6 What do you know about VRA core?

12.9   Practical exercises

Using the web pages listed in the Webliography, locate and study some complete examples of the metadata schemes introduced in this chapter.

12.10   References

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6. MODS Full Record Examples, http://www.loc.gov/standards/mods/v3/mods-userguide-examples.html.
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9. Encoded Archival Description, http://www.loc.gov/ead/.
10. EAD Elements by Tag Name, http://www.loc.gov/ead/tglib/element_index.html.
11. VRA Core Support Pages, http://www.vraweb.org/projects/vracore4/.
12. VRA Core Schemas and Documentation: http://www.loc.gov/standards/vracore/schemas.html.
13. VRA Core 4.0 Element Description, http://www.loc.gov/standards/vracore/VRA_Core4_Element_Description.pdf.
14. Categories for the Description of Works of Art (CDWA), http://www.getty.edu/research/publications/electronic_publications/cdwa/.
15. Lightweight Information Describing Objects (LIDO) http://www.lido-schema.org/.
16. Resource Description Formats and Digital Library Standards, http://www.loc.gov/standards/.

Glossary

AACR See *Anglo-American Cataloguing Rules*.

AACR2 See *Anglo-American Cataloguing Rules*.

Access point(s) Different units of information, such as author, title, or subject used by library users to locate specific bibliographic records.

Added entry (1) A secondary catalogue entry for an item headed with an access point different than the main access point. It usually contains less information than the main entry. This meaning of the term was valid in older catalogues, e.g. card catalogues. See also *Main entry*.

Added entry (2) A secondary access point. In card catalogues it was called a heading. A secondary access point (added entry, secondary heading), it was printed on the top of the card, while in electronic catalogues it is entered in a different field than the main entry. See also *Main entry*; *Access point*.

Analytico-synthetic classification scheme In analytico-synthetic classification schemes, a class number is synthesized by the classifier by combining class numbers representing the main subject and elements like the place, the language, the form of the work, the period of time, etc. In this approach the facets can be chosen as needed by the classifier and are not static, as in facet classification schemes. See also *Faceted classification scheme*.

Anglo-American Cataloguing Rules A set of standardized rules for describing the physical characteristics of a resource, for determining the main *access points* and their authorized forms. The rules were first published in 1967 in two editions, one for North America and the other for Britain. The second revision, known as AACR2, is the unification and update of the prior individual editions in a single text. Various revisions of this edition appeared at irregular intervals from 1988 to 2005.

Author catalogue A catalogue in which the entries are arranged alphabetically under the names of the authors or editors or compilers.

Authority control The process of maintaining the consistency of the form of headings in the authority file(s).

Authority file A list of authoritative forms of headings used in a catalogue (e.g. forms of a name, of a title, etc.) so that headings are applied consistently in new items.

Auxiliary table A table which lists additional classification notation concerning geographic information, the type of literature, etc. which may be combined with class numbers from the schedules to develop more specific numbers.

BC2 The second edition of the *Bliss Bibliographic Classification*.

Bibliographic control Encompasses all the tasks involved in creating, organizing, managing, updating, accessing and exchanging the information about the items of a library or of an archival collection.

Bibliographic data The data contained in a bibliographic record.

Bibliographic record A description of an item's characteristics, both physical (e.g. number of pages) and intellectual (e.g. subjects), presented in a specific format in a library catalogue.

Bliss bibliographic Classification (BC) A faceted classification scheme with thirteen categories (facets). Originally it was devised by Henry E. Bliss and published between 1940 and 1953. The second edition of the system has been extensively revised, maintaining only the

broad outline developed by H. E. Bliss. It is maintained by the Bliss Classification Association (BCA), formed in Britain.

Book number The part of a call number that distinguishes a specific item from other items with the same class number. It may result from the first three or four letters of the first author or the title of an item or the use of Cutter numbers or other symbols.

Broad classification Works are listed under broad, top-level, categories of a classification scheme.

Broader term (BT) A designator used in *Library of Congress Subject Headings* to indicate a broader topic.

Call mark See *Call number*.

Call number A code used to identify an item in the library catalogue and give its relative location on the shelf. It generally encompasses the class number, followed by notation representing the author name, the publication date, etc.

Card catalogue A library catalogue where bibliographic records are arranged on hand-written or printed cards.

Catalogue A comprehensive list of the items (i.e. books, periodicals, maps, etc.) in a library collection, arranged in systematic order to facilitate retrieval. See also *Author catalogue*; *Card catalogue*; *OPAC*; *Classified catalogue*; *Dictionary catalogue*; *Keyword catalogue*; *Title catalogue*; *Systematic catalogue*.

Cataloguer A person primarily responsible for preparing bibliographic records to represent the items in a catalogue.

Cataloguing code A set of thorough instructions for preparing bibliographic records for the items of a library collection. See also *Anglo-American Cataloguing Rules*; *Resource Description and Access*.

Cataloguing The sum of actions needed to develop, manage and maintain a catalogue of bibliographic records. It usually includes bibliographic description, subject analysis and assignment of classification notation. See also *Descriptive cataloguing*; *Copy cataloguing*; *Cooperative cataloguing*; *Subject cataloguing*.

Cataloguing-In-Publication (CIP) A partial bibliographic record for, usually, a book, which is prepared in advance of publication by the National Library or another agency in the country of publication. The publisher includes the bibliographic record on the copyright page of the published material to facilitate processing of the item.

Centered entry A heading printed in the centre of a page in the schedules of DDC, marked by the symbol >. It structurally relates a span of numbers that, together, they form a single concept for which no specific hierarchical notation available.

Chief source of information The source from which the cataloguer extracts the data for preparing a bibliographic description.

Children's Subject Headings (CSH) A list of subject headings tailored to the needs of juvenile titles. They have the same arrangement as regular subject headings but use easier and more understandable terms.

Class mark See *Class number*.

Class number A notational code representing the main subject of an item, serving as the basis for the *Call number*.

Classification code See *Classification scheme*.

Classification In general, the process of arranging objects into categories. In libraries, it deals primarily with the determination of the main subject of a work and the assignment of specific notation from a *Classification scheme*.

Classification schedule See *Schedule*.

Classification scheme A set of classes and rules for the systematic organization of knowledge into categories. The relationships among the classes are represented through the notation of the system.

Classification system See *Classification scheme*.

Classification Web An online service containing the schedules of the Library of Congress Classification scheme and the Library of Congress Subject Headings.

Classified catalogue A catalogue in which the entries are arranged using the class numbers of the items.

Classifier A person involved in the process of classifying documents.

Close classification Assignment of an item under the most specific division of a classification scheme.

Closed access See *Closed stack*.

Closed stack The practice whereby books are accessible only to library employees, who deliver the requested item(s) to users.

Colon Classification (CC) The first completely faceted system, devised by Dr Shiyali Ramamrita Ranganathan in 1933. The latest version was published in 2006. The five types of facets are *Personality*, *Matter*, *Energy*, *Space*, *Time* and are associated with different punctuation marks.

Concept May serve as the subject of a work. A group 3 entity of *Functional Requirements for Bibliographic Records*.

Concise AACR2 An abridged version offering simplified interpretations of the common rules of AACR2.

Control field A MARC field containing control information for the MARC record, e.g. the date of creation of the record, the agency that created the record, etc.

Cooperative cataloguing A practice whereby libraries participate in networks for collaboratively developing and sharing bibliographic records.

Copy cataloguing Adaptation, to follow the local cataloguing practices, of bibliographic records created by another cataloguing agency or library.

Corporate body An organization or group of individuals known by a particular name that either is involved in the creation or realization of a work or is the subject of a work. A group 2 entity of *Functional Requirements for Bibliographic Records*. It is also used in AACR2.

Cutter number Alphanumeric symbols devised by Charles Ammi Cutter for arranging books. The alphanumeric code derives from, usually, the first three letters of the main author or the title of the book, relying on the *Cutter table*.

Cutter table A table containing the codes for converting text to numbers which are then used in *Cutter numbers*.

Descriptive cataloguing The part of cataloguing dealing with the description of the physical characteristics of resources and the determination of access points.

Dewey Decimal Classification (DDC) A hierarchical classification scheme using Arabic numerals as notation for classifying books and other library materials by subject. It was devised by Melvil Dewey in 1876. It divides knowledge into ten main classes which are further divided. DDC has incorporated faceted features over the years.

Dictionary catalogue A catalogue in which all entries (author, title, series, subjects, etc.) are arranged in a single alphabetical order.

Dublin Core (DC) A general-purpose metadata scheme for defining elements like the title, creator and publisher of a digital resource.

Edition The second area of bibliographic description defined in the *International Standard Bibliographic Description*, regarding the details of the edition, revisions, corrections, etc. and the persons or corporate bodies responsible for them.

Encoded Archival Description (EAD) An *XML* standard for the encoding of finding aids in machine-readable form. A finding aid, in the context of archival science, is a document containing detailed information about a specific collection of papers or records within an archive.

Entry A single record in the library catalogue representing an item contained in one of its collections. See also *Main entry*; *Added entry*.

Entry point See *Access point*.

Enumerative classification scheme A classification scheme where all the required single and composite concepts are listed (enumerated). A class number is assigned to each concept.

Event Historical events, epochs, periods of time battles, and the like serving as the subject of a work. A group 3 entity of *Functional Requirements for Bibliographic Records*.

Expression The intellectual or artistic realization of a work in the form of alpha-numeric, musical or choreographic notation, sound, image, object, movement etc. or any combination of such forms. A group 1 entity of *Functional Requirements for Bibliographic Records*.

Facet A commonly occurring concept used in faceted classification schemes. See also *Faceted classification scheme*.

Faceted classification scheme Commonly occurring concepts (facets) are combined to build a class number. The facets are single and general concepts expressing place, time, physical form etc. and are combined with the main subject to build up the final class mark. Faceted classification is a more structured realization of the analytico-synthetic type because the facets are generic and common to virtually all subjects. See also *Analytico-synthetic classification scheme*.

Field See *MARC field*.

Free-floating subdivision (LCSH) A list of headings concerning recurring concepts that may be affixed to another subject heading to build more specific subject headings.

Functional Requirements for Authority Data (FRAD) An extension of the *Functional Requirements for Bibliographic Records* model for authority records. It defines the entities in authority records and their relationships and the user tasks.

Functional Requirements for Bibliographic Records (FRBR) A conceptual model, developed by IFLA, which enumerates find, identify, select and obtain an entity as the main user tasks. *Functional Requirements for Bibliographic Records* is independent of any cataloguing code and implementation.

General material designation An optional characterization of the type of the material to be catalogued, e.g. text, music, picture etc.

Group 1 entities A set of entities defined in *Functional Requirements for Bibliographic Records* dealing with the intellectual or artistic content of the products to be described. The entities of this group are: *Work, Expression, Manifestation, Item*.

Group 2 entities A set of entities defined in *Functional Requirements for Bibliographic Records* dealing with the intellectual or artistic content, the physical production and dissemination, or the custodianship of the products to be described. The entities of this group are: *Person, Corporate body*.

Group 3 entities A set of entities defined in *Functional Requirements for Bibliographic Records* serving as the subjects of intellectual or artistic endeavour. The entities of this group are: *Concept, Object, Event, Place*.

Heading An access point appearing at the top of a card in a card catalogue.

Hierarchical classification scheme A classification scheme where the subjects are arranged hierarchically, from the most general to the most specific. In this structure, successive steps in division create smaller and more specific classes.

IFLA Statement A list of principles, released by IFLA in 2009, intended primarily to guide the development of cataloguing codes and to provide a consistent approach for describing bibliographic resources of all kinds.

Indicator See *MARC indicator*.

International Federation of Library Associations and Institutions (IFLA) An independent nongovernmental international association of library associations, libraries and related institutions, sponsors and individuals. It aims at promoting global cooperation, communication and research in library science and librarianship.

International Standard Bibliographic Description (ISBD) A model outlining the elements in a bibliographic description. AACR2 is based on this model.

Item A single exemplar of a manifestation. A group 1 entity of *Functional Requirements for Bibliographic Records*.

Keyword catalogue A subject catalogue arranged in alphabetic order based on keywords.

LCSH See *Children's Subject Headings*.

Leader The leading field in a MARC record providing information for the automation system processing the record.

Library of Congress Classification (LCC) An enumerative classification scheme developed by the Library of Congress organized into 21 one-letter coded classes. Most of these classes are further divided into more specific subclasses, identified by two- or three-letter combinations. Subclasses are further expanded by decimals.

Library of Congress Name Authority File (NAF) Authoritative data for names of persons, organizations, events, places and titles.

Library of Congress Subject Headings (LCSH) A controlled list of terms or phrases for describing the subjects of items maintained by the Library of Congress.

MAchine Readable Cataloguing (MARC) A digital format for structuring bibliographic records marked with three-digit tags.

Main entry (1) A full catalogue entry for an item. It provides the complete information for the item and tracings to added entries. The main entry has the main access point at the top. The term used in card catalogues where retrieval by different access points required the existence of several entries per item. There is just one record per item in electronic catalogues, which comprises the complete information. Technically, retrieval in electronic catalogues is possible using various criteria, making this use of the terms 'main entry' and 'added entry' outdated.

Main entry (2) The main access point selected for the resource catalogued. In card catalogues it was called a heading. The main access point (main entry, main heading) was printed on the top of the card, while in electronic catalogues it is entered in a specific fields. See also *Access point*.

Manifestation The physical embodiment of an expression of a work. A group 1 entity of *Functional Requirements for Bibliographic Records*.

MARC field A logical division of a MARC record concerning a distinct piece of information for the item, e.g. author field, title field.

MARC indicator(s) One or two digits following a three-digit tag which provides special meaning for the data in the field, e.g. whether the author name is in *surname*, *forename* order, or the opposite.

MARC record Contains the information about a resource, fragmented into pieces marked with special tags.

MARC subfield A division of MARC fields, indicated by a two-character subfield code which is made up of a delimiter symbol and a lower-case letter or a number.

MARC tag A three-digit code representing the kind of data, i.e. the field, that follows.

MARCXML An XML schema based on the MARC21 standard.

Material or type of resource specific details The third area of bibliographic description defined in the *International Standard Bibliographic Description*, concerning the details of specific materials, such as maps.

Metadata Data about other data. Sometimes used as a synonym for a bibliographic record.

Metadata Object Description Schema (MODS) An XML-based bibliographic description schema for describing digital resources.

Narrower term (NT) A designator used in *Library of Congress Subject Headings* to indicate a narrower topic.

Non-Repeatable (NR) An indicator used in MARC to indicate that a field or a subfield is non-repeatable.

Notes The seventh area of bibliographic description defined in the *International Standard Bibliographic Description*. In this area the cataloguer can transcribe information that cannot be transcribed elsewhere, e.g. details about the previous edition(s) of the resource.

Object May serve as the subject of a work. A group 3 entity of *Functional Requirements for Bibliographic Records*.

Online Computer Library Center (OCLC) A nonprofit computer library service and research organization that helps libraries to share information.

Online Public Access Catalogue (OPAC) An electronic catalogue composed of bibliographic records describing books and other materials held by a library. The data are accessible via computer workstations either locally in a library or through the Web. The bibliographic records are usually structured as *MARC records*.

Open access See *Open stack*.

Open stack The practice whereby patrons have direct access to the shelves of a library to retrieve the required items.

Original cataloguing Description of bibliographic resources from scratch.

Other title information An explanation or elaboration of the title and what is basically known as the subtitle of the work.

Parallel title The title proper written on a resource in another language.

Paris Principles A comprehensive set of functions for catalogues stated by the IFLA in 1961 at a conference held in Paris. These functions draw on the earlier work of S. Lubetzky.

Patron A library user.

Person An individual involved in the creation or realization of a work or the subject of a work. A group 2 entity of *Functional Requirements for Bibliographic Records*.

Physical description The fifth area of bibliographic description defined in the *International Standard Bibliographic Description* deals with characteristics such as the extent of the item, the dimensions, etc.

Place A location that may serve as the subject of a work. A group 3 entity of *Functional Requirements for Bibliographic Records*.

Publication, production, distribution, etc. details The fourth area of bibliographic description defined in the *International Standard Bibliographic Description*, dealing with the publication, production and distribution of the resource.

RDA Toolkit A Web tool with searchable and browseable RDA instructions.

Related term (RT) A designator used in *Library of Congress Subject Headings* to indicate a related topic.

Relative index An alphabetical index to the subjects of the scheme. Under each subject, the disciplines in which the subject is found are listed alphabetically. It brings together the related subjects and the disciplines they belong to.

Resource Description and Access (RDA) A comprehensive set of guidelines and instructions on formulating data to support resource discovery covering all types of content and media. It concerns descriptive cataloguing data and is meant to be the replacer of *AACR2*.

Resource identifier and terms of availability The eighth and last area of bibliographic description defined in the *International Standard Bibliographic Description*. The ISBN, ISSN or another internationally agreed number is transcribed in this area.

S.l. (sine loco) A Latin abbreviation to be used when the place of publication, production, distribution etc. is not known. It means 'without place'.

S.n. (sine nomine) A Latin abbreviation to be used when the name of publisher, producer, distributor etc. is not known. It means 'without name'.

Schedule The part of a classification scheme that lists the classes, divisions etc. of the scheme. Schedules consist of the class headings or captions, the notation and specific instructions to classifiers.

Sears List of Subject Headings (SLSH) A subject heading list developed by Minnie Earl Sears. It includes the subject headings most likely to be useful for small and school libraries.

See also (SA) A designator used in *Library of Congress Subject Headings* to indicate information related to a topic within other subject headings.

Shelf list card An inventory card, kept separately from the other cards and containing additional information for a holding, e.g. number of copies, price, status of each copy (e.g. damaged).

Series The sixth area of bibliographic description defined in the *International Standard Bibliographic Description* regarding elements such as the title of the series, numbering within a series etc.

Shelf list catalogue A catalogue in which the entries are arranged in line with their shelving order.

Shelf mark See *Call number*.

Statement of responsibility A subarea dealing with the names of authors, editors, illustrators, composers, artists etc. who contributed to the development of the resource.

Subfield See *MARC subfield*.

Subject analysis The process of analysing the concepts of a resource. See also *Subject cataloguing*.

Subject cataloguing The identification of the intellectual properties of the item, i.e. what the item is about and the assignment of classification number and subject headings.

Subject heading Words or phrases describing a subject of a work taken from widely accepted, generic and controlled lists, e.g. *Library of Congress Subject Headings*.

Summaries (DDC summaries) A listing of the first three levels (main classes, divisions and sections) of the Dewey Decimal Classification scheme.

Systematic catalogue See *Classified catalogue*.

Tag See *MARC tag*.

Text Encoding Initiative (TEI) An *XML* scheme for the representation of texts aimed primarily for the humanities, social sciences and linguistics.

Title and statement of responsibility The first area of bibliographic description defined in *International Standard Bibliographic Description*, regarding the title of the work and information about the person(s) (authors, editors, compilers etc.) responsible for the work.

Title catalogue A catalogue in which the entries are arranged in alphabetical order based on their title.

Title page A title occurring usually after the cover of the book containing most of the bibliographic information, e.g. author name(s), title, edition, ISBN, etc., needed for cataloguing the book.

Title proper The title on the resource to be catalogued. Parallel titles and other title information are not considered as a title proper.

Tracing A listing on a main entry record on a card or other type of printed catalogue pointing to the additional catalogue entries for the specific item.

Uniform title A new or modified title assigned to a work which either has no title or has appeared under more than one title.

UNIMARC An older flavour of the MARC standard.

Universal Decimal Classification (UDC) A classification system developed by the Belgian bibliographers Paul Otlet and Henri La Fontaine at the end of the nineteenth century. It was based on the Dewey Decimal Classification, but it evolved as an analytico-synthetic classification system.

Use for (UF) A designator used in *Library of Congress Subject Headings* to indicate an equivalence relationship between topics.

USMARC An older flavour of the MARC standard.

Variable field A MARC field for coding the bibliographic data.

VRA Core A data standard for the description of works of visual culture as well as the images that document them.

Work A distinct intellectual or artistic creation. A group 1 entity of *Functional Requirements for Bibliographic Records*.

WorldCat The online union catalog of materials cataloged by *Online Computer Library Center* member libraries and institutions.

XML (eXtensible Markup Language) A text-encoding language where the data are enclosed in nested tagged elements.

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